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ORIGINAL ARTICLES.

THE MORPHIN HABIT; ITS TREATMENT, AND THE POSSIBILITY OF ITS CURE.

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THE undue use of morphin, either to relieve pain or for the purpose of re-establishing normal tone to the nervous system, has become so common and its abuse is so closely connected with the same predisposing causes which underlie all neuroses that an inquiry into its symptomatology and treatment seems pertinent. Even of more interest is the study of its causation and the establishment of the fact that, in the great majority of cases, it is as much a result of nervous heredity as is neurasthenia, insanity, epilepsy, or dipsomania. By this is meant that morphomania belongs to the group of functional neuroses which has as a basis the nervous diathesis, and that, when a person possessing this constitution even for a few times experiences the pleasing exhilaration that opium brings he not only becomes addicted to the drug but to such an extent its slave that he will sacrifice all in life that should restrain and stand between him and his appetite, and will barter honor, truth, and all social considerations for the relief of the craving so soon established. As a rule the morphomaniac receives but little sympathy, and while the world readily excuses those persons who become addicted to the habit because of pain, it harshly judges the equally unfortunate who have hereditary compulsion as an excuse.

Opium smoking, so prevalent in China, is to some extent practised in California, for every Chinatown in the State is a focus from which the infection spreads. As a rule, however, it is only the vicious and criminal who resort to these dens, and even this class soon discards the filthy and nauseous surroundings for the more seductive and less expensive needle. Opiophagia, or the eating of opium, while chiefly practised in Oriental countries, was until recently a most common vice in both Great Britain and the United States. Of all forms it is the easiest to conceal and can be practised for a certain time without detection.

The invention of the hypodermic needle and the discovery of cocain have added greatly to the dangers of morphin. It is possible either to smoke or eat opium for a life-time and still not be absolutely unfitted for social life, but the hypodermic use of morphin, combined as it usually is with cocain, soon brings physical and mental disaster, and in a little while the subject becomes a burden either on his family or the public charities.

The symptoms characterizing the morphin habit all refer to an unstable nervous state of either the body or the mind. The bodily symptoms are emaciation, weakness, ataxia, and paresis of the sphincters, which Levinstein and other writers have included under the name of morphinism, in contradistinction to morphinomania, under which term they include loss of will power, moral insanity, imbecility, and other mental perversions. During the first few months the use of the drug apparently gives mental strength and bodily vigor. The victim is exhilarated, moves with alacrity, and life is full of zest hitherto unknown. Neurotic longings and physical infirmities are forgotten, and for the first time, possibly, the patient experiences the sensation of being normal. He is certain of his own mastery, and the honeymoon following the first knowledge of the drug is bliss unspeakable. Not that visions such as De Quincey has familiarized us with are of usual occurrence, or that delusions and hallucinations are generally present; these may come with overdoses of the drug, but in the early stages, at least, they are temporary. The subject, probably beginning with a dose of ¼ of a grain occasionally, soon adopts it as a daily habit, and rapidly increases it to four or five grains, but later, finding that excessive doses are necessary to produce the old-time effect, he becomes alarmed and attempts to stop the drug. He reduces the morphin and possibly resorts to alcohol as a stimulant, but the fight is a losing one, and while he may temporarily reduce the amount he cannot throw aside the habit. Finally, thoroughly frightened, he seeks relief, probably takes some advertised cure and stoutly asserts his freedom, yet secretly indulges to a greater and greater extent, and despairing of any relief that morphin can bring, gradually adds cocain. When this stage is reached all hope of recovery unaided goes. He grows more infirm, more debased physically and morally, until he becomes a pariah among his fellow men. The desire for reform is a real one, and the victims are willing to sacrifice everything they hold dear in life—except morphin, could they only recover.

When fully under the power of morphin and the first pleasurable sensations have disappeared, the bowels become constipated, relieved by occasional diarrhea, the appetite is diminished, and the body emaciates. Frequently there is paresis of the sphincters, both rectal and vesical, and the heart becomes irritable, with a frequent and compressible pulse.

Venereal desire, at first increased by the drug, gradually lessens until mental masturbation takes the place of virile power. The skin becomes sallow, the eyes sunken, the face expressionless, and the gait ataxic. The mental symptoms are equally well-marked. The early effects of the drug are manifested in an increase of mental power and ability to carry out life's routine, but as seen as the habit becomes firmly established, and the victim after a few half-hearted attempts at abstinence finds his only course one of concealment and increase of the drug, he loses all interest in his work and his former pleasures and concentrates his whole energy on supplying himself with the opiate. He neglects business, no longer cares for social life, consorts with those similarly afflicted, and sinks into hopeless physical and mental decadence.

The effect of morphin on the mind, whether for the relief of pain or because of natural inclination, is destructive, and no one can become its victim without lowering of moral tone and loss of will power. A morphinomaniac may theorize as well as ever, but let a few hours elapse without the accustomed stimulant, and his unquiet nerves and uncontrollable longings causes him to jeopardize his soul for the drug, and there is no commandment in the decalogue he would not break in order to gain mental ease. No matter how honorable, upright, and conscientious a man's past life may have been let him become thoroughly addicted to morphin and I would not believe any statement he might make, either with reference to the use of the drug or any subject that concerned his habit. This extends further and clouds his moral perceptions in all relations of life. Authorities even go further than this and claim imbecility with organic brain changes. My experience has been large, and, while I cannot claim to speak authoritatively, yet my own observations do not confirm this statement. I do not deny occasional mental deficiency, yet while at Napa and later when temporarily in charge of the Home for Inebriates, many morphinomaniacs were committed as insane, yet not a single one exhibited either delusion or hallucination, and all were voluntarily committed for the purpose of cure. They showed no mental change on the day of their discharge (and they were all discharged "cured") differing from their condition on admission, yet, in a broader sense of the term they were all insane, that is, morally insane. They could not tell the truth, they were boasters, perhaps not so much in the belief that they would never relapse as in detailing the amount of drug taken. They ridiculed any possibility of relapse, yet many left these institutions and hardly let the day elapse before they were back in their old haunts.

Briefly summarized, morphin does not produce active insanity. Unlike alcohol, which, when long and excessively continued, produces chronic pathologic changes, morphin simply destroys the bloom of the mind, obtunds moral sensibility, and only when excessively used produces temporary mental aberration.

The treatment of these cases is a most difficult matter, and my main reason for dwelling on the nervous and mental state has been in order to show the difficulty of caring properly for these patients, while they are allowed the slightest liberty of person or freedom of judgment. There is certainly no royal road to cure that will in a night charm away desire. The only chance is in the slow and permanent upbuilding of the body and the protection of the patient against himself until his will power can reassert its old mastery.

To stop the drug is the first but not the most difficult step in treatment. Whether it be withdrawn quickly or gradually is a matter of indifference. Our books warn us against the sudden withdrawal of the drug because of probable heart failure. My experience does not bear this out. Certainly fifty patients, many of them *in extremis*, were admitted to Napa as insane, and it is fair to presume that when so radical a step was taken their condition was considered desperate. In every instance they presented the same general appearance—an emaciated body, a haggard face, pale, drawn and expressionless, eyes lusterless, and gait unsteady. They belonged to the dregs of society, and nearly all were graduates of the opium-joints in Chinatown. We could never determine on just what grounds they were committed, as none presented any mental symptoms except of moral degredation. The invariable practice was to shut them in a small room after bathing and supplying them with fresh clothing. This was necessary because they always came with their own clothing lined with morphin powers. Within twenty-four hours they were in a state of frenzy, begging and pleading for relief. Soon they became bedfast, vomited, and occasionally purged a viscid green-like bile peculiar to this disease. Nothing, either medicinally or dietetically, was done for their relief. The breakfast consisted of mush, with syrup and fat bacon, and their other meals were equally unappetiz-

ing. From the sixth to the eighth day they rallied sufficiently to walk around the ward, and in two weeks were usually able to go out and relish their food. Within a month their appetite was voracious. The return to physical health was rapid, and in from six weeks to two months each man was strong, robust, and apparently in full possession of both physical and mental health. They were loud, and possibly honest, in their assertions of reform, but in no single case, with one exception, do I know that the patient did abstain. While death may follow any mode of treatment, our experience demonstrated that sudden withdrawal was not dangerous, even though it seemed heartless.

In private practice the gradual reduction of the drug is the only procedure possible. The patient will not willingly endure the unnecessary suffering entailed by its sudden withdrawal. It is not a difficult matter to gradually reduce the drug from the daily five to ten grains to three-quarters of a grain within the first week, but it will probably take another week to reduce to one-quarter of a grain, and another week still to stop the drug altogether. It is not well to let the patient know when the drug is withdrawn as the physical influence is strong and the mind as well as the body demands treatment. Fortunately we have remedies which greatly assist us in so strengthening the nervous system that it can successfully stand the shock of withdrawal. Strychnin, hypodermically, and the red extract of cinchona internally, are excellent stimulants, and while they are not altogether as beneficial as they are in alcoholism yet they powerfully assist. In the lighter cases, especially in which no cocain has been used, the more serious evidences of shock, vomiting, rapid pulse, and physical prostration, may be slight, but when excessive and long-continued abuse has wrecked the system they will be pronounced and will continue more or less during the withdrawal; in fact, the rapidity of withdrawal must be regulated by the severity of these symptoms.

The strychnin solution should be of a strength of 1 to 200, and of this 10 minims can be used not less than twice, and possibly four or five times, during twenty-four hours. So specific is its action that, should the necessity be great, the system may stand one-half a grain without developing physiologic symptoms. With this, equal parts of red cinchona and fluid extract of cocoa should be prescribed, of which one dram may be taken two or four times daily. But with all this stimulation the system is occasionally rebellious, and the nervous system so unstable that bromid of potash must be added. The object in giving this is to overcome the nervous paroxysms, and when it is resorted to it should be pushed to narcotism. In other words, 90 to 120 grains should be given daily, and while bromism continues the morphin may be fully and finally withdrawn. Even from the beginning of treatment the morphin should never be given alone but always in connection with strychnin, and the patient must be kept in ignorance of the amount of drug taken and especially of its final discontinuance. These excessive doses of strychnin and cinchona are to be decreased as rapidly as possible, and by the end of the second week their administration can be reduced to two doses daily, during the third week to one, and discontinued in the second month, the strychnin to be again resorted to when symptoms demand it. The diet during the first two weeks should consist of milk to which as the appetite returns scraped steak may be added; later a generous diet may be allowed. By the end of six weeks the appetite is usually enormous and the body responds quickly.

By the end of the second month the patient presents every evidence of health, and it is now that the difficult portion of the treatment begins. Before this the services of a special nurse have been necessary, and the patient has welcomed his companionship, but with returning strength he resents surveillance; insists that his moral strength equals his physical, and too often persuades his friends that he is perfectly cured. But such cannot possibly be the case. Whether he stays under supervision or goes home the result is the same. By the end of the third month he becomes restless, irritable, and is the prey to all the old-time neurotic longings. He still asserts his freedom from desire, yet unless carefully watched will resort to coffee, alcohol, or other and stronger stimulants. It may again be necessary to resort to strychnin and bromid, although not necessary to produce bromism. Until several such attacks have been successfully combatted the patient remains in danger of backsliding. At my sanatorium six months is the shortest time for which I will receive such a patient, and the limit may be prolonged to twelve months. A shorter time invariably results in relapses, discouragement, and a return to hopeless slavery. For this reason the great majority of these patients never recover, but, when sufficient time has been successfully expended, and the neurotic taint is not too strong, re-establishment of the will power may proceed to such an extent as to overcome the lessening nervous outbreaks. When there is no hereditary taint, and the disease for which the morphin was originally prescribed can be cured, the prognosis is as hopeful as in cases of non-hereditary alcoholism, but the treatment, even in milder cases must be of at least six-months' duration. To discharge a patient at the end of the second month

because his physical system is restored is a waste of time and effort and can only succeed in very exceptional cases. When the disease has affected the mind to such an extent that organic weakness is present, no treatment can be of benefit. Time and protection of the patient against temptation until he is restored mentally as well as physically is the only rational method of treatment.

THE SYMPTOMS AND TREATMENT OF ZOSTER.

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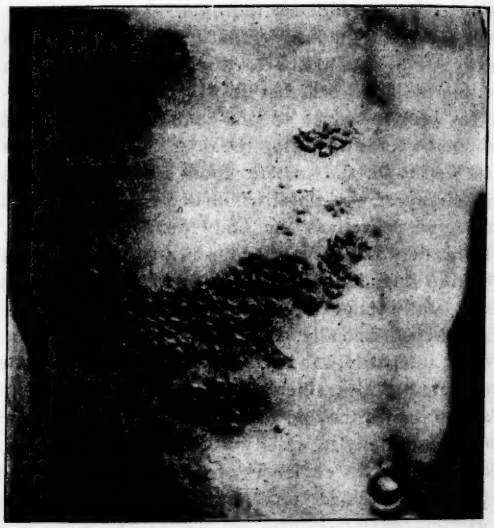
ZOSTER, or zona, as it is also called, is one of those diseases of the skin which is much more likely to be presented to the general practitioner for treatment than to the dermatologist. It is probably of much more frequent occurrence than statistics show because it is often unrecognized even by physicians of more than usual skill. The idea that every old woman recognizes it at once under the name of shingles is, I believe, a fallacy. So typical and unvarying, however, are the lesions that a man with a medical training rarely fails to recognize the affection after it has once been explained to him.

The outbreak of the disease is often preceded by several days of vague malaise, possibly by chills and some fever, and frequently by neuralgic pains of varying severity. Then come localized areas of superficial redness over the trunk of a nerve or nerves, which become slightly papular, and in a few hours present the typical appearance of the disease by developing vesicles, which are generally of small size. Each blister is surrounded by a narrow halo of inflammatory redness and the whole number of lesions are grouped together, often in patches, perfectly healthy skin intervening between the vesicles. Sometimes several small vesicles merge in one larger one so that the lesions are of varying size. Unless very large they show no tendency to break down spontaneously, but after a few days the contents, becoming more turbid, is absorbed or dries down as a brown crust which finally falls off without leaving a scar. Several crops of these vesicles may appear and undergo involution during an attack, each crop lasting from three to seven days, and often being preceded by an accession of neuralgic pains. When the disease appears at its commonest site over the intercostal nerves it is very unusual to find patches in the midline of the body, either before or behind, but they are especially prone to appear at the sides, while pressure over the nerve at its point of exit or in any part of its course is productive of very sharp pain. Very unusually there may be a bilateral appearance of the lesions almost meeting in front, an occurrence which, notwithstanding the popular superstition, has no particular significance.

The disease may occur at any time of life and in either sex. It is said to be more frequent in children than adults, but this probably depends largely on the practice of the observer. It has happened in my experience that by far the larger proportion of cases occur in adults past middle age, many of whom came not so much from any disquietude about the eruption, but for relief from the persistent neuralgia. Young adults and children, as a rule, suffer very little pain from this cause, and I can readily see that many would not call a physician at all unless the area involved was quite large.

The disease may occur on almost any part of



Zoster.

the body, the intercostal variety being by far the most common. However, I have never noticed that preference claimed by some authorities for the right side, nor can I see any anatomical basis for the belief. The next most common site is the region supplied by the lumbo-abdominal branches of the spinal cord, and less frequently still the genitocrural branches are involved. The fifth nerve may be affected, involving one side of the forehead and nose, and occasionally presenting a few vesicles on the eyeball itself. I remember one such case in which a permanent opacity was left in one eye by faulty treatment following a mistaken diagnosis. The lesions may appear on the limbs, generally above the elbow and knee, but not necessarily so. In a great many cases there is pronounced

anesthesia of the cutaneous areas over the affected nerve as compared with the opposite side. Sometimes there is a hyperesthesia instead, and either condition may persist for some time after the original lesions have disappeared. Atrophy and local paralysis are said to follow in some cases, but I do not remember having seen any such results personally.

The cause of the disease has been a matter of great dispute, but since about 1860 it has been associated with some doubtful nerve lesions. As patients very seldom die of zoster alone autopsies are not frequent, but in the cases on record lesions have been found in the ganglia on the posterior roots of the spinal nerves, but this is not necessarily a constant lesion for it is seen in tabes, in which disease these ganglia are presumably not affected. It has also been ascribed to a neuritis, and sections of nerves from affected areas substantiate this theory at times but not always. A few authors consider it the work of a germ and refer to what appear to be occasional epidemics. Others ridicule the germ theory. There is probably a certain amount of truth in all these theories for different cases may be differently caused, but until more is known about the microscopic study of nerve tissue the question cannot be settled definitely.

Zoster is more common in the spring and fall, as are all neuralgic troubles, and it has sometimes followed actual violence to a part. It was Crocker, I think, who first called attention to its occurrence in patients who had been subject to a prolonged arsenical treatment. I remember seeing a case of this sort in a child who had for sometime been taking Fowler's solution for the relief of some nervous trouble and presented a well-marked zoster of the chest and arm which subsided in a few days when the arsenic was discontinued.

In this case there was no neuralgia at all. Several of my cases occurred in aged patients who were anemic and debilitated, and in them the disease sometimes persisted a month or more. The pain was very severe and hard to control, depriving them of sleep and rest, and it was easy to see that in subjects of this class it might be a serious matter. In other cases I could find absolutely no cause for the outbreak as the health seemed perfect. In one it seemed to follow worry and hard study. A medical student before examination at the end of his second year developed quite a marked zoster over the left side of his chest, which persisted some time, and a year later just before graduating he developed a second attack, this time one foot being affected. This was rather unusual for very often one attack confers immunity from others.

The prognosis in almost all these cases is good, both as regards life and maintenance of function, but in old and cachectic subjects the duration is longer, the pain greater, and there is a tendency for the lesions to become infected and to ulcerate, leaving scars which we do not expect to occur in the more vigorous subjects.

In a young and healthy subject I do not think the disease requires any treatment except a local protective to prevent the blisters from breaking and becoming infected. The usual method is to cover them freely with a dusting powder and a layer of absorbent cotton and a bandage. Personally, I prefer to treat them as I do burns of the second degree. The blisters are simply laid open with a sterile instrument, no attempt being made to remove the contents, and then the whole region is sopped with the following:

Picric acid	ʒ iss
Citric acid	ʒ iii
Distilled water	℥ ii.

The picric acid converts the fluid in the vesicle into an antiseptic coagulum, the advantage of the citric acid being that it converts the alkaline vesicular fluid into an acid fluid which is much more readily acted upon by the picric acid. The application smarts a trifle at first, but is eventually soothing, and after it is dry it does not interfere with the local application for relief of the pain as do the various ointments and powders; it also hastens cornification and cuts short the crops of vesicles. It would be inadvisable to use it on the face because of the temporary but pronounced yellow stain.

For the relief of the pain there is nothing to be compared to galvanism, the positive pole being applied over the nerve-root and the negative moved slowly over the skin toward the distal extremity or about the patches. The strength of the current depends entirely upon the size of the electrodes. With the ordinary sponges, three to five milliamperes is about all the patient can bear, and his comfort is a good guide in the matter. With larger electrodes ten or twenty milliamperes cause no discomfort. The neuralgia will sometimes disappear for good in two or three minutes, sometimes only for a few hours after a good deal longer application. If the patient is sick in bed the portable faradic battery may be substituted, though in my experience it is not nearly as reliable. Of the drugs which control pain the number is very great, but I think phenacetin, in doses of 5 grains every three or four hours, is the most satisfactory, better than morphin, it seems to me, in pain of this character. However, it must be borne in mind that all the coal-tar products may be depressing to certain subjects, the old and cachectic for instance, and in these the general condition often calls for treatment aside from the local one.

PRACTICAL VERSUS THEORETICAL EXAMINATIONS.

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IT is to be deplored that our examinations for medical honors are too often managed in such a way as to require theoretical rather than practical knowledge. The writer has just taken part in conducting the microscopical portion of a competitive examination for resident physicians at the B—— Hospital. It was announced more than a month before the examinations that much importance would be attached to the microscopical diagnosis of the urine and blood. Two minutes were allowed for the inspection of each slide, and the power of the lenses was stated. Only the fine adjustment was permitted to be used, the microscopes being properly focussed for each applicant. The slides chosen contained carefully selected fields of the following objects: (1) a well-stained preparation of blood showing the inter-corpuscular pigmented form of malaria, such as appears in columns H and I of Manson's malarial chart; (2) the characteristic crystals of hemin, and (3) a centrifugated specimen of urine showing numerous pus-cells and granular and pus-casts.

One of the papers—a poor one, as the grade given was 10—was mislaid, so only the result of thirty out of the thirty-one papers handed in are appended in tabulated form. It will be seen that most of the men recognized the first specimen as blood, while the diagnosis of *plasmodium malariæ* was made in but nine cases. The hemin crystals were diagnosed correctly by only five, more than one-half the students (sixteen) considering them some form or other of bacteria, such as bacilli of tuberculosis, anthrax, typhoid fever, diphtheria, actinomycosis, or tetanus. Casts of some sort were recognized by fifteen; those who called them *staphylococcus*, *plasmodium malariæ*, *diplococci*, and tyrosin crystals attaining the lowest averages in the list.

The average grade, allowing 10 out of a possible 33⅓ for the diagnosis of blood in the case of the *plasmodium malariæ*, no matter whether the organism was found or not, was 33.22 out of a possible 100. The oral examinations in surgery, medicine, and therapeutics, conducted by the other members of the staff of the hospital, showed the men to be prepared to answer even the most difficult questions, and revealed a high degree of theoretical knowledge in those taking part therein. No doubt, had the men been called upon to describe the *plasmodium malariæ* or to give the method of preparing Teichmann's crystals, they would have done so with an accuracy and fluency that would have been most pleasing to the examiner.

In a similar examination of thirty nine applicants last year (*International Med. Mag.*, p. 319, May, 1897), a well-stained slide of leukemic blood was correctly diagnosed and described by only three, thirteen others diagnosing it as blood, but attributing its pathological features to pernicious anemia, *plasmodium malariæ*, *diplococci*, etc. The following diagnoses were also made: anthracotic lung, round-celled sarcoma, epithelial cells, hyalin casts, croupous pneumonia, and section of kidney. Cotton fibers in a sample of urine were diagnosed correctly by only six, others calling them linen thread (1), wool fibers (1), some foreign particle (3), unknown (3), muscle fibers (3), fibrin (1), mucin (2), nerve (2), elastic fibers and hair (1), elastic fibers (2), spirals from the sputum of an asthmatic (1), fibrous tissue (4), epithelial, granular, or hyalin casts (5), and cylindroids (6).

For five years I conducted the examinations in gross morbid anatomy at the University of Pennsylvania, and append a few of the answers received from students at the end of the third year of their medical education. Laminated clots from a ruptured aneurism were called a kidney affected with tubercle; a dermoid cyst of the ovary was said to be a carcinomatous mammary gland; appendicitis was mistaken for pyloric stricture, cancer of uterus, malignant growth of stomach, pearl disease, etc.; an intussusception was thought to be an imperforate rectum: parenchymatous nephritis was believed to be tuberculosis of the liver, and croupous pneumonia to be abscess of the liver. On first being told that a typhoid ulcer was a uterus with Fallopian tubes, and that an intussusception of the small intestine was an ovary, the questioner would be inclined to believe that he had not heard correctly; but after the following examination—an actual occurrence—he would think anything possible. A dermoid cyst, with hair, teeth, sebaceous matter, etc., was called diphtheritic membrane of the larynx; acute phthisis with cavities was diagnosed as croupous pneumonia; a large white kidney was pronounced a lardaceous uterus; a cystic kidney appeared to be miliary tuberculosis of the kidney or spleen, and appendicitis to be atrophy of the stomach. In a case of pyosalpinx in which the uterus and its adnexa had been removed at an autopsy held before the class, and the specimen described at a demonstration and an opportunity given twice for each student personally to inspect it, one of the men in the subsequent examination called it a carcinoma of the pyloric end of the stomach. The next is a good example of a too vivid imagination. A falx

No.	Microscope No. 1. Plasmodium Malariæ.	Microscope No. 2. Hemin Crystals.	Microscope No. 3. Pus-cells, Granular and Pus-casts.
1.	Red blood-corpuscles, eosinophiles.	Teased nerve-fibers.	Granular casts, molecular *débris*.
2.	Red blood-corpuscles, macrocytes, microcytes, leucocytes, hematozoa of Laveran.	Tubercle bacilli.	Leucocytes.
3.	Gigantoblasts, progressive pernicious anemia.	Anthrax bacillus.	Epithelial casts.
4.	Red blood-cell stained with eosin; whites, with methyl blue.	Hemin crystals.	Don't know.
5.	Eosinophiles and one basophile.	Uric-acid crystals.	Pus-cells.
6.	Eosinophiles, red corpuscles.	Typhoid bacilli.	
7.	Normal red blood-cells with one white cell.	Amorphous urates from urine, with urates of soda.	Staphylococcus pyogenes.
8.	Specimen of blood showing micro- and macrocytes and poikilocytes, normal casts, pernicious anemia.	Liver with bacteria.	Blood and blood-casts in urine.
9.	Red blood-corpuscles, white corpuscles (leucocytes).	Bacilli (club ends).	Plasmodium malariæ.
10.	Plasmodium malariæ, poikilocytes, red blood-cells, some free pigment, a few poikilocytes.	Uric acid.	Red blood-cells, granular casts, blood-casts, leucocytes.
11.	Reds, mostly normal, one microcyte, nucleated red, large mononuclear leucocyte.	Tubercle bacilli.	Pus-casts, if not blood-casts.
12.	Bright-red, round bodies—red blood-corpuscles, eosin stain; one white blood-corpuscle, hematoxylin stain, one red blood-corpuscle with an intercorpuscular body—either a nucleated red or a plasmodium.	Hemin crystals in a homogeneous mass of gelatinous material, probably destroyed blood-corpuscles boiled together.	Pus-cells in mucous material; also, some white blood-cells; three pus-casts, at the end of one hyalin albuminoid material can be seen; some granules.
13.	Red blood-disks, lymphocytes, mononuclear plasmodium.	Anthrax.	Diplococcus.
14.	A large number of erythrocytes, a single gigantoblast, some poikilocytes, lymphocytes.	Some drumstick bacilli, other spindle shaped, some granules.	Epithelial cells, epithelial casts, urates.
15.	Fat droplets.	Klebs-Loeffler bacilli.	Numbers of granular cells embedded in a matrix of albuminoid material.
16.	Normal red blood-corpuscles, nucleated red, large mononuclear lymphocyte, poikilocytes.	Bacilli.	Pus-cells, pus-casts, fat drops.
17.	Microcytes, macrocytes, poikilocytes, normal red blood-corpuscles, leucocyte, malaria plasmodium.	Diphtheria bacillus.	Pus-cells, pus-casts, amorphous urates.
18.	Blood-corpuscles, R. B. C., macrocytes, corpuscles containing plasmodium malariæ, white blood-corpuscle, blood.	Triple phosphates, uric-acid crystals, urine.	Microcytes, macrocytes, macroblasts, blood.
19.	Blood specimen, plasmodium malariæ.	Urine specimen, pus-cells, numerous rod-shaped.	Pus.
20.	Numerous red blood-corpuscles, one white blood-corpuscle, plasmodium malariæ in center of field in interior of red blood-corpuscle.	A great many bacilli, some of which are drumstick in shape, suggesting tetanus bacilli.	Pus-corpuscles.
21.	Blood showing normal erythrocytes, a leucocyte containing neutrophilic granules.	Large flat epithelial cell, with urinary crystals overlying it.	Urinary sediment containing blood-disks, epithelial casts, dark granular casts, phosphatic crystals.
22.	Red blood-corpuscles in rouleaux.	Actinomycosis or anthrax. [?]	Urine, granular casts.
23.	Macro- and microcytosis, poikilocytosis (pernicious anemia), few large leucocytes in field.	Bacteria; from shape and size should judge they were anthrax bacilli.	Epithelial and comp. granular tube-casts, loose pus-cells, one group of tyrosin crystals.
24.	Small round cells, one with a few dark granules, another appears entirely blue, probably leucocytes, mostly mononuclear, the granules might be neutrophile granules.	Field full of small rod-like bodies, cannot determine their nature.	Small round cells with granules in them, some arranged in columns, might be mucus or pus-cells.
25.	Eosinophile round cell containing stained granules, white corpuscles with one nucleus; mononuclear leucocytes, multinuclear leucocytes.	Field containing probably tissue with many crystals, nature unknown.	Casts of various sizes and varying in contour, loose cells, probably blood-casts, with free blood-cells.
26.	Plasmodium malariæ.		Epithelial tube-casts.
27.	Large red cells, nucleated small, red nucleated reds, a polynuclear leucocyte, pernicious anemia.	Tetanus bacillus.	
28.	Poikilocyte, eosinophilic cell, reds decreased.		
29.	Fat droplets.		Granular casts, amorphous phosphates, epithelial cells.
30.	(1) Red blood-cells—a roundish, red, biconcave disk; (2) poikilocyte, irregular; (3) lymphocytes—small, dark-purple cells.	Tubercle bacilli in lower and center and right of field—small, thin, black rods.	Fatty casts—long, thin casts covered with fat globules.

cerebri containing a large osteophyte (internal ossifying pachymeningitis), with the longitudinal sinus and portions of the dura covering the upper parts of the cerebral hemispheres, was diagnosed, after a short study, as a bone which had been swallowed and became lodged in the esophagus!

Let us have more practical teaching, and require practical examinations for graduation in our medical schools, for choosing resident physicians in our hospitals, and for license from our medical boards to practise medicine in our several States.

THE PHYSIOLOGIC AND THERAPEUTIC ACTION OF EXTRACT OF THE MAMMARY GLAND.[1]

BY JOHN B. SHOBER, M.D.,
OF PHILADELPHIA.

A STUDY of the literature of the subject, and my own observation and experience, has led me to the following conclusions in regard to the physiologic and therapeutic action of the thyroid gland: (1) That when employed in the usual doses, *e.g.*, the equivalent of from 15 to 20 grains daily of the dessicated powder, it acts as a powerful and dangerous depressant to the heart and produces extreme nervous prostration. (2) That it should not be employed for any extended period of time in larger doses than the equivalent of 3 to 6 grains daily of the dessicated powder.

The gratifying results obtained by many observers from its employment in myxedema and psoriasis, and by Dr. Robert Bell in primary carcinoma of the cervix uteri, show that it has a marked influence upon epithelial structure, and it is a powerful lymphatic stimulant. Since it has been shown that diseases of the thyroid gland are often accompanied by an excessive menorrhagia, it would seem that the function of this gland exerts some powerful influence upon the lining membrane of the uterine canal. Having successfully treated four cases of dysmenorrhea with menorrhagia in young married, sterile women, with small doses of dessicated thyroid gland, I am inclined to believe that such is the case.

The fact that fibroid tumors of the uterus are frequently associated with morbid glandular action and cystic degeneration may account for the more or less successful results which have been obtained by the use of thyroid gland in a few cases, these results being due to the action of the gland upon the endometrium and utricular glands which have undergone some morbid change. Owing to these considerations I have long felt that the thyroid gland will be found to have a limited usefulness in the treatment of fibroid tumors. My attention was called to the possible value of mammary-gland extract in the treatment of uterine fibroids by a paper presented by Dr. Robert Bell of Glasgow at the meeting of the British Gynecological Society, held in May, 1896, and published in the *British Gynecological Journal*, xii, pp. 157–170, 1896–1897, also in the *International Medical Magazine*, Philadelphia, v, pp. 379–386, 1896. The paper was entitled the "Treatment of Carcinoma of the Uterus, Certain Forms of Ovarian Disease, and Fibroids of the Uterus by Means of Thyroid, Parotid, and Mammary Gland Therapeutics." The author mentions two cases of fibroid tumors of the uterus and two cases of menorrhagia and dysmenorrhea in which remarkable results were obtained by the use of mammary-gland elixir.

Last November I began the employment of mammary-gland extracts and dessicated powders in the treatment of fibroids of the uterus. The preparations were supplied to me by the Armour Company, and by another company of Chicago. I am now treating four cases of uterine fibroma with the product and it will give me great pleasure to report them briefly on this occasion.

CASE I.—Mrs. W., white, aged thirty-two years, the mother of two children, consulted me November 7, 1897. Menstruation was regular and normal until after birth of her last child, 3½ years ago, when she began to experience menorrhagia and dysmenorrhea, her periods lasting five to seven days. About 2½ years ago she became conscious of an abdominal growth which has increased rapidly in size. During the past year she has suffered from increasing menorrhagia and metrorrhagia and all the associated symptoms, and she has become a confirmed opium habitué. During this time she has flowed every two weeks, the flow lasting from seven to ten days.

The growth resembled a pregnancy near term, rising one inch above the umbilicus and extending laterally into both flanks, concealing the anterior superior spines of the ilia. It was so firmly fixed in the pelvis that it had absolutely no range of mobility. The abdominal parieties were tightly stretched over the tumor. She was very anemic and extremely nervous. The following measurements were taken: Girth 37 inches; from symphysis to upper edge of tumor, 7½ inches; lateral measurements, 10½ inches. On December 14th, at the end of a menstruation which had lasted two weeks, I began the use of the powdered extract of mammary gland. Her next period began on January 2d and lasted only three days. It was free but not profuse, there were no clots, and only slight pain. She declared that the medicine seemed to aid her materially in her efforts to stop the use of morphin. The tumor seemed to have contracted laterally. It had slight lateral mobility and its surface felt irregular. The anterior superior spines of the ilia could be located. The girth measurement was the same, the perpendicular measurement was ½ inch smaller, and the lateral measurement was 1½ inches smaller. The cervix had risen in the pelvis. Her next period was delayed eleven days and lasted only three days. It was less free than at any time during the previous two years and she experienced no pain. The tumor had

[1] Read at the Twenty-third Annual Meeting of the American Gynecological Society, Held at Boston, May 24, 25, and 26, 1898.

diminished markedly in size, the upper edge being 1 inch below the level of the umbilicus. It had become more irregular and there was increased range of mobility.

I now began to push the drug, and gradually increased the dose from the equivalent of 12 to 72 grains of the raw gland. On the second day after taking the 72-grain dose she developed intense pain, which was located in the tumor. The growth felt extremely hard, and pressure upon it increased the pain. The treatment was stopped for five days and then resumed in 48-grain doses daily. On March 25th her menses appeared again, being *two weeks overdue*, and lasted only three days. The flow was normal in every respect. On April 4th the following note was made: "The tumor is freely movable in the abdominal cavity and is quite irregular in outline. The abdominal walls are no longer tense from intra-abdominal pressure, but are soft and yielding, and can be lifted away from the tumor. The upper edge is 1 inch below the umbilicus and there is marked lateral contraction. The tumor has been reduced about one-third. Her general health has steadily improved and she is rapidly overcoming the morphin habit." Her next menstruation appeared April 20th, two days earlier. It lasted three days. She is still under treatment.

CASE II.—L. G., colored, single, thirty-two years old, had been conscious of a growth in the abdomen for four years. She was kicked in the stomach five years ago. During the past two years she has had profuse and painful menstruation and free leucorrhea. During the past year she bled about every two weeks, the flow lasting six or seven days. She was anemic, debilitated, and was losing strength.

Upon examination a large, irregular, multinodular fibroid of the uterus was found rising two inches above the umbilicus. The bulk of the tumor was on the right side filling up the right iliac fossa. The patient was placed upon increasing doses of mammary gland on January 13, 1898. Under large doses she developed pain in the tumor, which pain disappeared when the dose was reduced. The following is the record of her menstrual periods: January 15th to 22d, profuse, painful; clots. February 9th to 15th, profuse and painful; three days early. March 8th to 14th, free, pain only during first and second days; one day early. April 7th to 12th, some lumbosacral pain on first and second day; two days late. The menstruation is becoming regular and less profuse. There is no intermediate bleeding. Her general health is improving. She is gaining weight and strength. The tumor has diminished very little in size. She is still under treatment.

CASE III.—M. D., colored, aged thirty-three years. Multinodular fibroid of the uterus. Two small nodules were found on the left lateral wall near the fundus, and from the posterior aspect of the fundus arose an oblong, pedunculated fibroid, about 4 inches long and 3 inches broad. It could be felt rising 2 inches above the pubes, and was freely movable from side to side. During the past two years her menstrual periods have been irregular and frequent, usually lasting only three days, but very painful and rather free, with clots. She began treatment November 27, 1897. She now menstruates regularly without pain, and her general health is improving. The two nodules on the left lateral wall of the uterus can no longer be demonstrated and the pedunculated nodule is now one-half its original size.

CASE IV.—B. Y., colored, aged thirty-four years; had one child and two miscarriages many years ago. She had a large, irregular, multinodular fibroid, extending to within 1½ inches of the umbilicus. It was about 4 inches in breadth and freely movable. Her menses have been irregular, lasting three days. The flow was profuse, with clots, and accompanied by severe pain. She often had a flow lasting two or three days between her regular periods. She began treatment April 2d. Her March period, lasting from the 20th to the 23rd, was profuse and painful. Her next period, April 20th to 23rd, was less painful than at any time during the past year and was not so free as usual. On May 7th she said she felt greatly improved in health. Her clothes, which would not meet before treatment, are now loose.

The influence of mammary-gland products in the treatment of fibroid tumors of the uterus, as shown in these cases, is unusual. These women are all under the age of thirty-five years, and, therefore, the menopause cannot be said to have had any influence upon the results which have been obtained. Without the aid of any other form of treatment the tumors are decreasing in size, and the general health of the patients is steadily improving. Under the influence of the drug, menorrhagia and metrorrhagia cease, and the menstrual periods come on at regular intervals. Even if under a prolonged course of treatment these tumors are not dissipated, we can at least claim that the necessity for operative interference has been delayed. It would be folly to attempt to offer an explanation of the physiologic action of mammary gland. That it has a powerful influence upon the uterine muscle or connective tissue, acting in a manner somewhat similar to ergot, seems evident. The fact that large doses of the gland caused cramp-like or contracting pains in the tumors in Cases I. and II. would seem to bear out this statement.

Yellow Fever at Key West.—It is reported that three unmistakable cases of yellow fever have appeared among the marines at Key West, and as many more suspicious cases. The Naval Station at that point will, therefore, be abandoned and the naval base removed temporarily to Hampton Roads. Steps have been taken to quarantine the Naval Station, and to prevent the spread of yellow fever to the city of Key West. The appearance of yellow fever at Key West is not an unusual experience. It is confidently predicted that the disease will be promptly suppressed.

WAR ARTICLES.

THE SICK AT CAMP WIKOFF.

[From Our Special Correspondent.]

UNITED STATES GENERAL HOSPITAL,
CAMP WIKOFF, MONTAUK POINT, L. I., August 22, 1898.

THE hospital staff has been so overburdened with work during the past week that every member of it will rejoice when the last of the transports bearing sick and wounded has arrived from Santiago and discharged its load. One ship after another has been inspected, ambulances and covered wagons have carried the patients either to the general hospital or to the detention-camp, and then, just as we have begun to breathe with some comfort, another vessel arrives, and the program is repeated. Fortunately, the plan of the general hospital allows of the accommodations being increased to an almost unlimited extent, and where we could provide ten days ago for 500 patients, we can now care for nearly twice that number. It was found necessary to extend the wards already up, and to erect additional ones, so that there has been much confusion. We are gradually settling down to a regular routine, however, and things are running smoothly.

A majority of the men brought to the hospital from the transports have been in a condition closely bordering on collapse, and each shows pitiable results of lack of good food and nourishment. The men stood the voyage from Santiago fairly well, as a rule, but all complain that the transports were overcrowded, and that there was a lack of medicines and rations. The care each of the sick received was as good as could be expected under the circumstances, but the majority say that about the only medicines on board were ammonia, camphor, and opium.

Nurses pass down each ambulance train with whisky and hot milk, and minister to each of the men before they are unloaded at the hospital, and more of the same is given them as soon as they are taken to the wards. This treatment has had a wonderful effect in reviving them, and in from twelve to fourteen hours after admission most of the men have been able to do for themselves. I cannot better describe the appearance of these poor fellows than by saying that, without exception, they remind me of pictures of the prisoners in Libby Prison during the Civil War.

The general condition of the patients, aside from exhaustion, is fairly good. There are about 200 cases of typhoid fever, 4 of measles, 30 or more of malaria, and more than 100 of chronic diarrhea and dysentery. The Red-Cross nurses and Sisters of Charity, who arrived last week, are doing most acceptable work, and their help was much needed.

The expected improvement in the water-supply has not materialized as yet, although we look for a change for the better very soon. The matter of latrines, as far as capacity is concerned, promises soon to be a serious question. In the vicinity of the hospital the ground is low, and when a pit is dug it drains from the swamps, so that it is impossible to go more than a foot below the surface before the excavation fills with water. It soon will be necessary to locate the sinks on higher ground some distance from the hospital, which will add greatly to the inconvenience. The constant use of the commodes in the wards by those patients who are able to be out of bed is impracticable, as will readily be understood. The surgeon in charge, Major Ira C. Brown, has established a guard which is on duty day and night at the latrines to prevent the commission of nuisances.

Supplies, both medical and otherwise, are coming in fairly well, but as the hospital fills the requisitions of the different regimental surgeons it is necessary to practice considerable economy. The Red-Cross Society and the Women's National War Relief Association have done splendid work, and the sick and wounded have much to thank them for.

The detention-camp, as well as the grounds of the General Hospital, are now patrolled night and day by mounted guards, and no one is allowed to pass the lines except upon presentation of an order signed by Major Brown. All the patients ill with yellow fever at the isolation camp are doing well and will recover. No case of this disease has developed primarily in the camp.

Up to the present time but twenty wounded men have arrived here. The wounds had all healed prior to their arrival. All speak in words of praise of the first-aid dressings, which were applied on the field immediately upon receipt of the injury.

The burying-ground has been established on a hill overlooking the camp. Up to yesterday there had been five deaths—three from typhoid fever and two from dysentery. The bodies are given a military burial, but on account of the nearness to the hospital wards the firing of a volley and sounding of "taps" has been prohibited. A Protestant chaplain and a Roman Catholic priest are in constant attendance on the patients, and one or the other conducts the burial service.

There have been no cases for the surgical wards as yet. All the typhoid-fever patients, with one exception, are improving. We have discharged, on an average, twenty men a day so far, and expect to keep this up. A post-office has been established under the supervision of Major Brown, and is proving a great convenience to all at the hospital.

THE HEALTH OF SAMPSON'S FLEET.

BY RAYMOND SPEAR, M.D.,
ASSISTANT SURGEON, U. S. N., ON BOARD FLAGSHIP "NEW YORK."

THE health of the navy during its stay in Southern waters has been remarkably good as compared with that of the army. The navy has been exposed to the same tropical diseases as the other branch of the service, but not, however, to so great an extent. The principal diseases that the navy doctors have been fighting to keep out of their ships are yellow fever, dysentery, and malaria. The first has been effectually kept out by quarantine and disinfectant measures; dysentery has not been allowed aboard any of the ships because everybody drinks distilled water only; malaria has been guarded against by selecting places free from the disease for anchorage and by not allowing the men to go ashore. A great many of the ships have now been in Southern waters for nearly eight

months, the first rendezvous having been at Dry Tortugas, where the general health was excellent, not one death being recorded. The "Montgomery" and "Fern" were in Havana harbor after the "Maine" was blown up but there was little sickness on either ship. The health of the divers who were compelled to work in water that was so foul that they could scarcely see two feet in front of them during the day was excellent. These men, as well as their diving-suits were disinfected after each day's work, and the men themselves were given quinin and whisky. None of the men was allowed ashore; all the water they drank was distilled from water obtained on shore, and all articles taken from the wreck were disinfected as soon as they were taken aboard the ships. Coal and provisions were obtained from Key West.

Then Sampson's larger ships were assembled off Santiago. Here, away from the shore, the general health of the men continued to be of the best. The temperature rarely mounted to a higher point than 85° F., and there was almost always a fresh breeze blowing. A certain amount of communication with the Insurgents was necessary. The Cubans were allowed aboard the ships just long enough to transact their business and no longer. When the army landed at Siboney, yellow fever soon made its appearance in its ranks and a quarantine was established by the navy against the army. The exigencies of the situation demanded a certain amount of communication between them but it was limited to official business.

On the "Maria Theresa" there are wreckers and a guard of sailors from the U. S. S. "Potomac." The wreckers obtain their drinking-water from shore, and several cases of diarrhea can be traced to this cause, as the sailors who drink distilled water have been perfectly healthy. Two of the wreckers were taken sick and all on board the Spanish ship were much relieved to learn that their companions were suffering from malaria and not "Yellow Jack." The odor of decaying flesh was still strong and in some of the lower compartments of the ship a lantern would not burn. The gases that have collected in some parts of the vessel are very irritating to the eyes, but the burned saltpetre from the powder may be responsible for this. Amid these unsanitary conditions the wreckers and guard have lived, and on the whole their health has been good.

The navy captured a number of ships in Santiago harbor. Crews were sent to clean and disinfect them, and when they returned to their respective ships, in the course of a week, they were all disinfected, as were their clothes. While aboard the prizes they were made to drink the distilled water they had taken with them. All returned in good health. The crew of a steam launch belonging to the U. S. S. "New York" was compelled to sleep ashore one night at Siboney during the embarkation of the army. The men slept near a stagnant pond at the water's edge and three of them were taken sick with malaria, as proved by examination of their blood. There have been some cases of malaria in the fleet, but most of the patients have old malarial histories.

Grippe has been with the fleet also. Some of the ships are infected with this disease and cases crop out every once in awhile. They are characterized by general weakness, irregular fever, and catarrhal symptoms of the upper respiratory tract. All patients recover in the course of a few days. Until the fleet anchored in Guantanamo Bay there was very little diarrhea. In Santiago Bay, however, it made its appearance and the only explanation that can be given is the difference in temperature between the days and nights, which is considerable. The nights in the bay are considerably cooler than they are out at sea, and as the men usually are careless about the way they sleep it is easy to see how their abdomens can become chilled by exposure to the cool night air. The symptoms these patients present are: diarrhea, abdominal cramps, and moderate fever. The cases run a course usually from one to four or five days. On one of the smaller ships almost all the members of the crew were taken sick with abdominal cramps and diarrhea, and all complained of thirst, while some had slight fever. The drinking-water was examined and found to be full of salt. As soon as this was remedied all recovered.

Venereal diseases, except syphilis, have become a thing of the past. This is readily explained by the fact that most of the men have not been ashore for several months. A few cases of heat exhaustion have been recorded on some of the smaller ships. On the large vessels the firemen have little to do and are having a comparatively easy time.

There have been only three deaths on the ships stationed about Santiago, not counting the men killed in battle. One man committed suicide by shooting himself in the head, another was killed by the explosion of a shell, pieces of which entered his abdomen, and the third killed himself by drinking shellac.

The following is a sample of the daily report of the sick on some of the ships. Many of the cases on this report are minor injuries; there are also some patients left here by other ships which are waiting the arrival of the "Solace."

	Number of people aboard.	Number of sick.
"New York"	658	21
"Oregon"	555	14
"Brooklyn"	560	27
"Massachusetts"	516	21
"Newark"	315	14
"Iowa"	583	8
"Indiana"	562	13
"Dixie"	325	2
"Marblehead"	269	6
"Yankee"	324	5
"Detroit"	250	3
"Vesuvius"	79	0
"Resolute"	122	11
"Scorpion"	111	4
"Vixen"	80	6
"Wompatuck"	32	0
"Osceola"	28	4
Marine Battalion	496	12
	5865	171

This gives an average of about three per cent. sick for the ships, and about two and a half for the Marine battalion.

The navy has lost remarkably few in killed and wounded during the war. The cases of sickness have been so few that the fighting ability of this branch of the Government service has not been impaired in the least.

SANITARY NOTES ON CHICKAMAUGA PARK.

By HENRY I. RAYMOND, M.D.,
MAJOR AND SURGEON, UNITED STATES VOLUNTEERS.

I HAVE been watching with keen interest the experiment of rendering the water of the Park fit for drinking purposes, by use of the Magnon and Berkefeld filters. One month ago these filters were introduced on the grounds, and were liberally supplied to each regiment or separate command with instructions for their use.

Have they been found of practical utility under conditions here existing? The answer is, no. The reason or reasons for the failure of the experiment I will not venture to assign. One Magnon and one Berkefeld filter has been made to supply the Ambulance Company, about 180 strong, with filtered water free of germs and palatable, but this was possible only under the exercise of the greatest vigilance by the officer of the day, and the Quartermaster, who were held to strict accountability by the commanding officer.

Nevertheless, while it has been demonstrated that the thing can be done even under adverse circumstances—hauling of water twice daily from a spring six miles distant from camp and with a command crippled by sickness, and numerically weakened by detached service—the experiment has been trying to the nerves and equanimity of the officers concerned, and we hail with delight a changed condition of affairs by which it is proposed to boil all drinking-water in large iron vessels furnished by the Quartermaster's Department. The water can then be measurably aerated by pouring it from a height in a gentle stream through the air into a barrel for its reception, and cooled by ice if that article can be furnished.

Another similar proposition has been under advisement, namely, to supply the fifteen regiments with twenty barrels of boiled water per day by use of one large boiler guaranteed to supply one thousand barrels per day. The cost of boiler *in situ* not to exceed six hundred dollars; to be of sixty horse-power and with pump running at four or five pounds pressure to force the water into barrels on a platform of sufficient height to permit the water to be drawn off directly into barrels placed in a wagon at the side of platform; or the boiled water could be piped to different localities throughout the Park.

Despite the attempt to secure an unimpeachable water-supply, sickness (typhoid and malarial fevers and diarrheal disease) has been greatly on the increase during the past month. When writing you at the beginning of the experiment there were about three hundred cases of sickness in our Division Hospital; to-day there are nearly six hundred cases.

It is proposed to send North, to-morrow, fifty of these men from the 1st Maine Regiment on furlough by a special train, and fifty more will be transferred to the George M. Sternberg General Hospital which is about to open its doors. This hospital is located near the Widow Glenn field, and is under the immediate charge of Surgeon R. E. Giffen of Nebraska, with Major Charles B. Ewing as Executive Officer. Its personnel further includes a large number of Acting Assistant Surgeons and trained female nurses. Its capacity is five hundred beds, with facility for further expansion. The hospital tents or wards are arranged in a terraced formation, ten deep, running down the hillside with an open platform between each descending ward. All floor space is covered with planed lumber. The hillside furnishes natural drainage. The linen looks immaculate. The influence of this hospital promises to be very great, granting much-needed relief to our overburdened division hospitals.

During the first half of August our Division Ambulance Company has transported about twelve hundred sick. In addition to the overcrowded condition of the division hospitals the regimental dispensaries, now assuming the proportions if not the title of regimental hospitals, are receiving many sick of their own commands, there being in some instances many more than a hundred sick "in quarters" and dispensary.

Regimental hospitals may, perhaps, be suited to the present peace conditions, although it is well known that the experience of the Civil War demonstrated their inadequacy and want of adaptability to the exigencies of the battle-field.

Among the means adopted for the prevention of disease may be mentioned the establishment of regimental camps on the open hillsides where the sun's rays can find free access to the soil unhindered by foliage, and where more perfect drainage can be secured than on the relatively low-lying grounds; also, the frequent removal of camp-sites, that by longer occupancy would lead to soil pollution and air contamination. The flooring of tents with lumber—those pertaining to officers and men, sick and well alike—is a measure calculated to reduce the number of malarial and diarrheal cases to the minimum. Requisitions have been made for lumber in sufficient quantity for the purpose, and this not inconsiderable item of expense has been allowed under a wise and liberal administration of affairs.

To provide a wholesome water-supply and to raise the men from the damp soil while sleeping in the night air, are two very important factors tending toward an amelioration of conditions existing in this camp. Another factor that may be urged in explanation or extenuation of the enormous sick-rate in the camp is the considerable number of men who were physically unsound, and hence unfit for the duties and hardships of camp life, when enlisted. These before receiving their discharges on Surgeon's Certificate of Disability unfortunately have tended to encumber the sick report for a longer or shorter period, as well as to engross the Surgeon's time in the perfecting of their discharge papers, and the board's time in reviewing their papers previous to their being submitted for the action of authority competent to order the discharge.

FEVERS THAT ACCOMPANY AN ARMY.

[Special Correspondence of the MEDICAL NEWS.]

MORRO CASTLE, SANTIAGO DE CUBA, August 15, 1898.

AFTER a month in the field with the Fifth Corps of the United States Army operating in the province of Santiago de Cuba, I have been able to see and study, in a general way, the fevers which accompany any large body of men actively engaged in a tropical country, constantly exposed to the sun even during the midday hours when the natives themselves are unable to engage in the ordinary duties necessary to their lazy existence, and who have learned from experience that exposure to the heat during these hours predispose them to the indigenous fevers. This, with an unacclimated people handicapped by the hardships of war, such as insufficient amount and poor quality of food, the bad sanitary conditions that a large body of men constantly moving without baths or change of clothing for days are subjected to, and compelled to drink water that has been contaminated by a fleeing mob of filthy refugees, who bathe, drink, cook, and wash from the same stream, has taken more lives from the United States than all the Spanish shot and shell. The Medical Department has had a very grave question to consider, and the care of the sick has proven to be one which will be given more thought and attention in the future. Medical supplies, doctors and nurses, tentage, and ambulances have not been sufficient for our sick during the past, but those in authority are making herculean efforts to correct what the American people would never forgive, and which would be a blot upon the name of any country whose almost inexhaustible resources will permit of no such neglect.

Leaving Fort Monroe July 3d, on the hospital ship "Relief," were fifteen acting-assistant and volunteer surgeons, among whom were Dr. Senn of Chicago, and his first assistant, Harry A. Greenleaf, all of whom were landed at Siboney on the 7th of July and temporarily assigned to the general hospitals at that place, where all of the wounded up to this time had been transported and cared for. After three days work here we were sent to the front and assigned to different regiments and commands. The writer, being detailed to Batteries G. and H. of the Fourth Artillery, siege train, remained with that command until the 23rd, when he was ordered with Battery G. of the Fourth Artillery to Morro Castle, and is at present acting-surgeon at that fort, the first United States army fort established on the island. During this time I have had to deal only with the sick, there being no wounded, and have noted as carefully as possible under rather trying conditions the symptoms, course, and sequelæ of these fevers.

The prevailing fever, and the one which is often incorrectly diagnosed, and is quite frequently mistaken for some type of malaria, is commonly called "sun fever" in the States, and is often encountered in the Southern States during the harvesting season. This fever, very much resembles malarial fever in its onset, and during its course the symptoms are in a great many respects like those of yellow fever, and undoubtedly have been mistaken for the latter. This, of course, would not be likely to occur in general practice where every case could be closely watched, temperature taken, daily examination of urine made, and where histories would be of some value, but this is vastly different from what we had to contend with in the field during the past month. Histories were of no value whatever, because every soldier has been subjected to the same hardships, and exposed equally to the same hot, tropical sun. Then again, this fever must be differentiated from malaria, and here also there are like symptoms to complicate conditions and make a true diagnosis difficult.

In sun fever, malaria, and yellow fever one meets with very similar symptoms, such as a temperature ranging from 100° to 107° F.; vomiting, in color clear, yellow, and dark; headache, supra-orbital, and post-cervical; pains in the epigastrium, lumbar region, and in all extremities; constipated bowels, and high-colored urine, very small in amount during twenty-four hours. In malaria and sun fever the patient has frequent chills, which differ in some respects, a fact which is of great diagnostic value. In yellow fever and sun fever the conjunctivæ are injected, but the injection is of different color and intensity, which also is a very valuable point in differential diagnosis.

During the past month, during two weeks of which time I have seen as many as 120 of these fever cases daily, I have only seen four true cases of yellow fever. I have often met what I was forced to look upon as suspicious cases, in which albumin was found in large amounts in the urine, the men being promptly isolated and and treated as yellow fever cases, but only in the four instances mentioned have I met with what I consider an infallible sign, and that is the characteristic injected conjunctivæ. This is difficult to describe, but when once seen is never forgotten. It is of a pale-yellow color, generally diffused, and gives the eye a lack of expression and appearance of a sightless one. This should be especially noted in contradistinction to the appearance of the eye in sun fever, in which there is a bright-red injection, the capillaries are well-defined and separated by small areas of healthy conjunctiva, and the expression is that so often seen in the eyes of fever patients. In both yellow fever and sun fever vomiting occurs in the early stages, the color of the vomit in the first named ranging from dark-yellow to black, and finally becoming fixed in character. The vomiting has no especial relation to ingestion of food, while in sun fever it always follows the taking of food, and often even the drinking of water. In the latter it varies from light to yellow in color, has no odor, and does not weaken or depress, as in yellow fever. The two common symptoms of malaria and sun fever are high temperature and chills. In malaria, however, there may be a little morning and evening temperature, while in sun-fever a morning temperature is rarely noted, and the evening temperature is perhaps a degree and a half to two degrees higher than in malarial fever, the difference in surface or skin temperature being perceptible to the touch. There is also a difference in the chill phenomena. In malaria there is the usual rise in temperature, followed by a chill, and then the sweating stage, while in sun-fever the chill accompanies the fever

and there is no distinct sweating stage, the chill being essentially nervous. This fever has been improperly called "acclimating fever," but apparently the natives are as frequently attacked by it and their attacks are quite as severe as those met with among our troops. The natives, however, either from experience or a natural antipathy to work, are immune to a certain extent because they expose themselves but little to the midday sun. Sun-fever has incapacitated our troops more than anything else in Cuba. Upon exposure to the sun or reflected heat for days afterward the men suffer from intense headache and nausea, either to the extent of vomiting or to a degree that interferes with natural digestion, and consequently they lose flesh and become so weak that at the present time there are at least five thousand of them on the island who scarcely have strength to present arms.

The treatment of this fever in the acute stage is simple, and fortunately so, for in time of war some medicine-chests are left behind, and in my little experience I have used but three drugs in a general routine treatment. While the treatment is somewhat heroic, it has been quite satisfactory. Of course, when possible, a full bath or sponge bath is given immediately. This is followed by the administration of magnesia sulphate in half-ounce doses every hour until copious watery stools are passed. Calomel should always be given in ½- to 1-grain doses every hour until from four to six doses have been taken in cases in which the patient is seen in the morning and before fever is apparent. Ol. terebinthinæ should be given in 20- to 30-minim doses three times daily. Water should also be taken in large amounts, and should be well acidulated with lime-juice. Phenacetin, salol, and acetanalid would have been of much value, but were not to be had. The ideal treatment, of course, after the acute stages, is to send the patient where climatic conditions are favorable. This seems rather absurd and impracticable in the case of an army of sick men, but apparently it is the only solution of the question, and the only logical treatment. Up to the present time I have not met with a single case of enteric fever, and while conditions are in every way favorable to its production it is probably not an indigenous fever. Both yellow fever and enteritis will doubtless become epidemic in Santiago before the summer has passed as the city is in a very unsanitary condition and overcrowded. In fevers that accompany an army in a tropical country it seems to me from my small experience that sun fever is the most to be dreaded, and necessarily unavoidable.

STANLEY WARREN, M.D.,
Acting Assistant Surgeon United States Army, Battery G., Fourth Artillery.

MEMORANDA RELATING TO OPERATIONS OF THE MEDICAL DEPARTMENT.

THE following memoranda have just been issued from the Surgeon-General's office at Washington:

Medical Officers.—The number of medical officers allowed by law is inadequate in times of peace. The total number allowed is 192. There are at present thirteen vacancies. The administration of the Surgeon-General's office and the Army Medical Museum requires six. Eleven are on duty at medical-supply depots and as chief surgeons of military departments. One is at the Soldiers' Home; fifty-six are at general hospitals, on hospital ships, and at garrisoned posts. Four have been disabled during the war by sickness. Five are on duty as chief surgeons of army corps. This leaves ninety-six medical officers available for duty with troops in the field. Of these, thirty-five have been appointed brigade surgeons of volunteers and are distributed among the various army corps.

This deficiency in regular medical officers has made it necessary to employ nearly 400 contract surgeons, and more are being employed every day. Most of these doctors from civil life are doing good service, and many of them are thoroughly well-equipped physicians and surgeons with ample hospital experience, but it has been impossible to make a careful selection, owing to the great pressure of business in the Surgeon-General's office, and the urgency has been so great that it has not been practicable to have examining boards to pass upon their qualifications.

In addition to this there have been appointed by the President, eight brigade surgeons with the rank of lieutenant-colonel, twenty-four division surgeons with the rank of major, and sixty-five brigade surgeons; also, three medical officers for each of the regiments of United States Infantry, Cavalry, and Engineers. All volunteer regiments have three medical officers appointed by Governors of States.

General hospitals have been established at Key West, Fla., with a capacity of 755 beds; at Fort McPherson, Ga., 1050; Fort Thomas, Ky., 432; Chickamauga Park (Leiter Hospital), 255; Fort Monroe, Va., 535; Fort Myer, Va., 308. In addition to this several hundred sick and wounded soldiers have been placed in the Marine Hospital on Staten Island, and in civil hospitals in New York and Brooklyn; also, nearly 200 in the civil hospitals in Charleston, and a smaller number in civil hospitals in various parts of the country.

The hospital train, which was equipped for service June 22d, and consists of ten tourist sleepers and a dining-car, has made repeated trips from Camp Thomas, Tampa, and Fernandina, with sick to the general hospitals at Fort McPherson and Fort Thomas, and has proved to be most useful.

The hospital ship "Relief" was purchased May 18th, but owing to delays in preparing her for service did not sail from New York until July 2d. Four days later she arrived at Siboney with an amply supply of medical stores of all kinds and with sixteen doctors. She returned to New York with a load of wounded and was then dispatched to Porto Rico. She is now returning to New York with 260 sick and wounded soldiers.

The hospital ship "Olivette" went with the Fifth Army Corps from Tampa, Fla., to Santiago and brought a load of wounded from that port to New York. She returned to Santiago with supplies and is now en route to New York with 200 patients.

Medical Supplies.—When the troops were ordered from their respective posts into the field, each regiment was required to take with it medical and surgical chests, litters and field supplies for three months. Afterward, medical supplies in ample quantities of all kinds were sent to Tampa for the Fifth Army Corps, about to sail for Cuba, and supplies have subsequently been sent to the several camps that were formed, wants being anticipated as far as possible and requisitions approved promptly on receipt.

Supplies for the army have been furnished from three medical-supply depots: New York, St. Louis, and San Francisco, the latter suppling very largely, by purchases on the Pacific Coast, the troops that went to Manila. The St. Louis depot supplied the camps and regiments in the Mississippi Valley and the West; and the New York depot the camps and expeditions fitted out from the Atlantic Coast.

In addition to general medical supplies in great variety, 1204 medical and surgical chests have been issued, the surgical chests containing surgical instruments and dressings especially designed for the relief of the wounded on the battle-field.

The extent of the demand upon the medical-supply depots is indicated by the following figures, showing the issues of some of the more important articles:

First-aid packets	No.	272,000
Hospital-corps pouches	No.	5797
Orderly pouches	No.	509
Pocket cases	No.	962
Surgeon's field cases	No.	369
Field-operating cases	No.	328
Medical and surgical chests	No.	1204
Litters	No.	2250
Litter slings	No.	7600
Cots and bedsteads, with bedding	No.	18,185
Blankets, gray	No.	23,950
Field desks	No.	440
Quinin pills	No.	7,300,000
Chloroform and ether	Botts.	13,220
Gause, sublimated, metal packages	Pkgs.	100,625
Gauze bandages, three sizes	No.	331,776

Sick and Wounded. — At the present time (August 15th) we have a full record of 40,520 cases of sickness and wounds that occurred among a mean strength of 154,028 men, during the months of May, June, and July. As the average of the three months probably six per cent. of the troops were constantly sick. Reports from commands not yet represented in the statistics are expected daily.

Hospital Corps.—At the outbreak of the war the Hospital Corps consisted of 100 hospital stewards, 103 acting hospital stewards, and 520 privates, making a total of 723. The larger part of this number was ordered with the troops that left their respective stations to the camps of concentration and accompanied the regular regiments in the Fifth Army Corps to Cuba, the smaller part being left behind at the various army posts, they being just enough to take care of the medical property.

Enlistments were at once ordered throughout the country of suitable men for the Hospital Corps, special attention being paid to enlisting nurses, pharmacists, cooks, drivers, mechanics, etc. A good many medical students and young physicians were also accepted.

By means of enlistments and afterward by transfers from volunteer regiments to the Hospital Corps a large number of men were obtained, and to-day there are in service by actual count 5084. Probably 1000 are in service whose enlistment and transfer is not yet reported.

In addition to the members of the Hospital Corps enlisted for the purpose of taking care of our sick and wounded we have employed 141 male and 386 female nurses under contract.

CLINICAL MEMORANDA.

SARCOMA OF THE ORBIT.

By DAVID WEBSTER, M.D.,
OF NEW YORK.

DR. C. P. McC., aged thirty-one years, was referred to me by Dr. Gibney, March 18, 1891, with the following history: Four weeks before his friends thought they noticed a slight protrusion of his right eye and called his attention to it, but he experienced nothing wrong until a week later he began to have double vision on looking upward or to the left. In a very few days the eye began to bulge forward quite perceptibly and the protrusion increased rather rapidly. He had no pain in or about the eye and had done nothing for it. His family history was negative. He denied syphilis. When eight years old he was thrown by a pony and had considerable swelling in his groin. His physician thought it might have to be lanced but succeeded in scattering it. After some years the swelling in his right groin reappeared and was lanced. He had had chronic suppurative otitis media of the right ear, with occasional exacerbations, since infancy. Hearing: right ear, 2/60; left ear, 20/60.

There was marked exophthalmus of the right eye and slight swelling of the lids. A small tumor could be felt through the lower lid at the outer angle of the orbit. This tumor was very firm to the touch. Right eye: vision, 20/70; 20/15 with 1.50 D. cyl. axis 90°. Left eye: vision, 20/30; no improvement with glasses; accommodation normal. Ophthalmometer showed astigmatism, 2. D., against the rule. Hyperphoria R. 2°; no esophoria nor exophoria; abduction 6°, adduction 16°. Visual field of right eye somewhat contracted above and to the temporal side; tension normal. Ophthalmoscopic examination: temporal half of right disk somewhat pale and bluish; a small scleral crescent to temporal side of disk.

The patient was admitted to a bed in the Manhattan Eye and Ear Hospital on March 20th, and having been placed on the operating-table was further examined. His epitrochlear glands were found to be slightly enlarged. His inguinal glands had a "shotty" feel. None of his cervical glands was enlarged. The patient admitted having had gonorrhea many years since, but still denied ever having had a chancre. After due consultation, however, it was decided to defer the operation and to try the effects of antisyphilitic treatment. As the case was thought to be sufficiently grave to justify heroic treatment he was at once put upon iodid of potassium, 60 grains, three times a day, to be increased 15 grains daily, and oleate of mer-

cury, 20 per cent., half a dram being rubbed into a different part of his body or limbs night and morning.

March 23d. The patient complains of pain in his jaw at the angle, and in both eyes. He thinks this is caused by the iodid.

March 25th. The iodid has been increased to 110 grains and he is having half a dram of the oleate of mercury rubbed in three times a day. He has been attacked with severe pain in his toes, for which a liniment and hot fomentations were applied.

April 1st. The eye is not so prominent and the tumor seems to have diminished some. Vision, 20/15 in each eye. As the patient seemed to be improving he was, at his own desire, allowed to go home, with a view to continuing the treatment there and returning to the hospital when indicated.

April 6th. He writes that he is taking 110 minims of a saturated solution of iodid of potassium three times a day and rubbing into his skin half a dram of oleate of mercury twice a day. His foot pains less than it did but he has frequent shooting pains in the eye.

April 10th. He has stopped the oleate because it began to effect his mouth. He has severe pain in his foot every night.

April 15th. He is now taking 120 minims of the iodid solution three times a day. He is actively engaged in professional work. His eye pains some and he thinks he cannot see quite so clearly with it as he did.

April 18th. He continues to suffer with his right foot. The orbital tumor seems not to have made any progress. He has slight headache occasionally, a thing he never had before.

April 23d. He is taking 125 minims of the iodid solution three times a day. The pain in his foot has been relieved by 10-grain doses of antikamnia.

May 8th. The patient asks permission to place himself under the treatment of a quack who promises to remove the tumor without operation.

July 1st. The quack has failed to help him. The eye protrudes more and is now almost constantly painful. The pain keeps him awake nights.

July 6th. Readmitted to the hospital. There is considerably increased exophthalmus, the eye being pushed directly forward but with an upward displacement, being on a higher level than the fellow eye, and solid fulness can be felt between the infra-orbital edge and the globe. There is no swelling of the lids or of the conjunctiva. There is scarcely any redness noticeable anywhere about the eye. The eyeball itself is, apparently, perfectly sound. Vision, 20/70; 20/20 with —2 D. cyl. axis 90°. With my consent the patient consulted Dr. Knapp, who said he believed the neoplasm to be a periorbital sarcoma, and advised its removal. The patient was, accordingly, placed under ether, and the eye was washed with bichlorid-of-mercury solution, 1–5000. With a scalpel an incision was made along the lower orbital margin and curved around the external canthus along the supra-orbital edge to one-third its extent. The included tissues were then dissected up and turned upward over the eyeball, the conjunctival cul-de-sac being carried with the flap. The tumor, which was thus exposed, was then removed piecemeal, the sclera being exposed on one side and the wall of the orbit on the other. The tumor embraced the eyeball, as it were, in a socket, extending far back toward the apex of the orbit. The anatomic elements in the orbit were all destroyed except in the superonasal region, where the growth did not extend. The orbital plate of the superior maxillary bone was found to have undergone absorption from pressure of the growth. The hemorrhage having been arrested and the wound cleansed, the flap was replaced in position and sutured. The wound was dressed with bichlorid gauze and cotton and a bandage applied.

July 7th. There has been considerable bleeding from the wound, the blood saturating the dressings. Upon removing the dressings and washing the eye the wound seemed to be healing by primary union.

July 8th. The bandage was again stained with blood, which seemed to come through the palpebral fissure.

July 9th. Inflammation has set in. There is swelling of the lids and the dressings are saturated with bloody exudation. Vision: perception of light.

Panophthalmitis set in soon after this, and the patient remained in the hospital until August 14th, nearly six weeks after the operation, when he was discharged with a sightless and shrunken eyeball.

September 22d. His family physician says there is no return of the growth. The entire right side of the face, nose, teeth, and tongue have been numb since the operation. He has no pain in or around the orbit, but a very disagreeable feeling.

The tumor never returned in the orbit. The next I heard of the patient was that he died on April 25, 1892, about nine months after the removal of the orbital tumor, of *cancer of the throat*. I am under the impression that the tumor was examined microscopically and found to be a sarcoma, but the present pathologists of the hospital are unable to find any record of such examination. If I had removed the eyeball at the time of the operation, the patient would have been spared weeks of suffering.

MIDDLE MENINGEAL HEMORRHAGE DUE TO SKULL-FRACTURE; OPERATION; RECOVERY.

BY EDGAR P. COOK, JR., M.D.,
OF CHICAGO;
INTERNE IN COOK COUNTY HOSPITAL.

F. S., aged twenty-two years, a dentist, was admitted into the Cook County Hospital at 11.20 P.M., October 4, 1897, in a comatose condition. His father stated that the patient had come home about three hours before and complained that he had been struck on the head by a man and did not feel well. He assured his parents that there was no occasion for alarm, for he "would be all right"; but instead of getting better he gradually became stuporous and passed into the unconscious condition present on his admission into the hospital. Two physicians had examined the patient at his home and advised the application of an ice-bag to the head.

It was subsequently learned from the patient himself that a man had struck him on the side of the head with the bare fist in a quarrel. The blow was delivered at close range as he was walking past his assailant, and although it was sufficient to stagger him he did not fall. On the contrary he was able to walk nearly a mile to his home. At the time he felt dizzy but he did not lose consciousness until at least half an hour later.

When admitted into the hospital, the patient lay in complete coma; it was impossible to arouse him on making strong supra-orbital pressure. On irritation, he moved the left arm and leg but there was nearly complete paralysis of the right upper and lower extremities. No special change in the facial muscles was noted. The pupils were unequal, the left being widely dilated and not reacting to light. The pulse was 48, regular, and full. The temperature was normal and the respirations were slow and regular, but not stertorous. The patient retched frequently but did not vomit. Occasional convulsive tremors passed over the body. The bladder and rectum were normal. Over the left temporal muscle, above and in front of the ear, was a slight contusion but careful examination failed to reveal any local signs of skull-fracture.

A diagnosis of middle meningeal hemorrhage was made and immediate trephining advised. The entire head was shaved and cleansed surgically. Under ether anesthesia a horse-shoe-shaped incision was made over the left temporoparietal region, beginning anteriorly just behind the temporal artery, to avoid wounding, and continuing upward and backward behind the ear, the center of the incision being directly above the left ear midway between the auricle and the sagittal suture. A flap consisting of the periosteum and superimposed muscular and cutaneous tissues was turned down, disclosing at the base of the flap a depressed, comminuted fracture of the squamous portion of the temporal bone of the size of a half-dollar. The fragments of bone were elevated and removed, exposing a large, dark, bulging blood-clot underneath. As the removal of part of the clot started brisk arterial hemorrhage, the opening in the skull was rapidly enlarged with rongeur forceps in order to expose the field better. More clot was now removed and the source of the hemorrhage was discovered, the blood spurting in a stream from a small opening in the dura, which was pushed away some distance from the skull by the clot of blood. To arrest the hemorrhage a round needle, threaded with fine silk, was passed through the dura near the bleeding-point and the thread used as a tractor to pucker up the dura; the bleeding-point was then easily caught up with hemostatic forceps, a procedure previously tried unsuccessfully, as the forceps merely pushed away the tense dura without grasping any part of it. The active hemorrhage having been checked, the artery could be seen coursing through the dura as a light line on a darker background; judging from its anatomical relations the vessel was the posterior branch of the left middle meningeal artery. Two fine silk ligatures were passed through the dura and around the artery, one on each side of the point of rupture. On tying these and removing the forceps the arterial hemorrhage was entirely controlled. The balance of the blood-clot was now gently removed, the little finger being used for this purpose. The clot was of the size of a tea-cup, at least, and on its removal a large area of the internal surface of the petrous portion of the temporal bone was exposed to sight and touch; the clot extended to the base of the skull and also a considerable distance toward the vertex. The dura did not return to its normal position on the removal of the clot and a large vacant space remained inside the skull. Into this space a loose iodoform gauze packing was introduced, one end being brought out at the lower posterior point of the scalp wound. Another gauze drain was carried through and through at the base of the flap outside of the skull. The external wound was closed with interrupted silkworm-gut sutures, leaving provisional sutures at each end of the flap where the gauze drains protruded. The usual large aseptic dressing was then applied.

The patient returned from the operation in good condition at 3 A.M., October 5, 1897. The pulse was 64 and the respirations normal. The pupils were equal and reacted normally. Six hours later the patient was awake and perfectly rational. He said he felt all right and wanted to go home. All paralysis of the extremities had disappeared; there was a slight impairment of the muscular action of the right side of the face but no definite paralysis. Hearing was normal. The subsequent course of the case was uneventful. The drain into the skull was removed at the end of thirty-six hours and the other drain twenty-four hours later, and the wound closed by tying the secondary sutures. Union was by primary intention.

The patient left the hospital at the end of four weeks. There was no paralysis or disturbance of special sense. At the site of the fracture just anterior to the left external auditory meatus the brain pulsation can be noted on close inspection beneath the temporal muscle, showing that the dura has been restored to its normal site.

I am indebted to Drs. Davison, Bassoe, and Ford for assistance in the operation. The case is of interest, presenting, as it does, both in the history and the physical findings, the classical picture of internal hemorrhage from the middle meningeal artery. It also illustrates how so serious a lesion may arise from slight external violence, and emphasizes the value of prompt diagnosis and immediate surgical interference in a class of cases where the expectant plan of treatment has almost invariably resulted fatally.

THERAPEUTIC NOTES.

Blood Clysters in Pulmonary Tuberculosis and Anemia.—WHITTAKER (*Jour. Amer. Med. Assoc.*, August 6, 1898) calls attention to the polycythemia which exists at high altitudes. At 14,000 feet in the Cordilleras, in Peru, the number of red blood-cells is almost double the number found in blood at the sea level. The increase at less high altitudes is proportional. To this polycythemia, not less than to the bracing air and out-of-door life, he attributes the ease with which tuberculosis is cured in

mountain-resorts. By artificially reducing the pressure in a room in which a rabbit is kept, it has been found possible to cause a corresponding increase in the number of his red cells, and a corresponding increase in the amount of oxygen which he absorbs. Even in so short a time as four weeks, this difference amounted to about one-fourth. Whittaker tried similar experiments upon men, but failed to get the same results, perhaps on account of the relatively small size of the cabinet, and the lack of an abundance of fresh air.

Attempts, however, to supply the system with a daily quantity of ready-made blood, were more successful. To prevent coagulation, preserve the life of the corpuscles, and to intensify the alkalescence of blood, he adds to it a little salt, soda, and milk sugar. Some persons are able to drink blood without repugnance, but taken in this way it has no particular advantages over other equally nutritious food, as it has to be digested before it can be absorbed. He found it, therefore, much better to introduce it into the intestine, as may readily be accomplished in the following manner:

The patient is directed to add a teaspoonful of salt, two tablespoonfuls of soda and a tablespoonful of sugar of milk to a pint of boiled water, and to pour one-half of this quantity into a clean glass jar, requesting the butcher to add to it one pint of fresh calf's blood. The fluid should be injected at once, or if this is not practicable, the jar should be put upon ice and the contents used within twelve hours. In no case should the fluid be heated, as heating favors coagulation and dissolution of the blood. This quantity should be introduced every night, and in bad cases twice a day, morning and evening. In all cases the bowel should be previously washed out with a simple injection of water. As a rule, to which there are many exceptions, the blood is entirely absorbed, so that often not even a trace of it is found on irrigating the bowel on the following morning.

The injection should be made with the patient lying on the left side. For fifteen minutes thereafter he should lie upon the back, and then go upon the right side for another quarter-hour, so as to favor the distribution of the fluid throughout the colon.

The results obtained by this treatment in one case of pernicious anemia, and in cases of phthisis without fever, were most satisfactory. Patients with a high fever were not benefited. One patient with fever and repeated hemoptyses, had such copious bloody expectoration, that the clysters were abandoned for fear that they might tend to keep up the hemorrhages. There was no change after the discontinuance of the injections, however, and in no case did any ill effects follow their use.

The injections give absolutely no annoyance to the patient, as may well be inferred from their bland character; and they are heartily commended as being far more nutritious than any others yet devised.

Treatment of Hemorrhage in Typhoid Fever.—MCCORMICK (*Penn. Med. Journal*, July, 1898) says that the treatment of hemorrhages in typhoid fever, by the administration of opium, morphin, or the acetate of lead, should be respected for its age rather than for its logic. The effect of the opium is to dry up every secretion from the mouth to the anus, and the reduction of the bile in the intestine leads to decomposition and the formation of gases in the bowel, and to the absorption of poisonous products into the system. Tympanites, always an unfavorable symptom in typhoid fever, is especially undesirable in hemorrhage, which the distension of the ileum will be likely to renew. His practice, therefore, is to give a saline laxative to relieve all tension of the bowel, and to carry off the blood-clots, whose presence in the intestine offers to the bacteria a splendid nutrient medium. In addition he washes out the colon with ice-water. Thus the bowel is cleaned and relaxed, and put at rest, and the patient is given the best chance for recovery.

The Diagnosis of Morphin Addiction.—LETT (*Canada Lancet*, August, 1898) has found that the Bartley method of testing the urine of a patient for the determination of the morphin habit is by no means infallible. This test is as follows:

"Make suspected urine alkaline with carbonate of soda. To this add one-fourth its volume of chloroform or amylic alcohol. Shake well, allow to settle, draw off the chloroform and add a small amount of iodic acid. If morphin be present a violet tinge will be noted."

Lett has known this test to give positive results in a number of instances where there was the very best reason for believing that the persons whose urines were tested had not taken any morphin; and, furthermore, the test sometimes fails in the presence of morphin, as in the case of one patient who was taking nearly 3 grains of the drug daily. A better method is the following:

"Collect about twenty ounces (less will do) of the suspected urine. If it has not an acid reaction acidulate with dilute hydrochloric acid until it reddens blue litmus. Concentrate to about three ounces and let stand in a cool place for twelve hours, and then filter. To the filtrate add sufficient carbonate of sodium to render it alkaline, and let it stand for twelve hours, and then filter and collect the precipitate. Wash this precipitate with distilled water made slightly alkaline by carbonate of sodium and dry it. Digest the dried precipitate with pure alcohol at a gentle heat and filter, evaporating the filtrate to dryness, and dissolving the residue with dilute sulphuric acid. Test for morphin by the iodic-acid or other well-known tests for morphin salts."

By the above method Lett has succeeded in obtaining morphin sulphate from the urines of persons taking very minute amounts of the drug, and has been able to identify the crystals by means of the microscope, when the Bartley test failed.

Apenta Water in Yellow-Fever Cases.—The clerk of the Touro Infirmary, New Orleans, reports that during the recent yellow-fever invasion, Apenta water was used with gratifying success for the purpose of evacuating the bowels. Large quantities of Apenta water are said to have been forwarded through the medical supply depot United States General Hospital to Santiago, Cuba, for similar use in the Army.

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A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, AUGUST 27, 1898.

THE MALTREATMENT OF OUR SOLDIERS TO BE THOROUGHLY INVESTIGATED: CONGRESSIONAL INQUIRY DEMANDED.

Now that the war is over, we trust that the time has come to avenge the many wrongs put upon our gallant soldiers by those public servants whose cheerful duty it should have been to shield them in every possible way. In view of this sentiment, we hope that the expressed intention of ex-Postmaster Dayton to probe thoroughly the needless neglect of our soldiers will not be words writ upon the sand. He is said to have recently addressed a meeting, called to furnish aid to sick and wounded soldiers, as follows:

We are going to find the men who are responsible for the dreadful conditions that have existed. We are going to get evidence from every available source to determine the responsibility for the outrageous and shameful neglect of sick and wounded soldiers, and for the horrible condition of the transports that carried them away from Cuba. Suffering and death as the result of official incompetency will be investigated on every possible line, and the public will know where the guilt belongs when we have finished.

There will be no protection for the guilty, and neither dignity of official position nor official influence will hide the ones who are responsible. If the responsibility for this wretchedness and suffering belongs to the head of the War Department or to the head of the Administration, or to any other head, it will be known and fixed. We solicit information from every source to aid this work.

The committee appointed to conduct this investigation is headed by Augustus W. Peters, President of the Borough of Manhattan; R. B. Roosevelt, the secretary, will receive all communications. Every soldier who has suffered from neglect may send a detailed statement, accompanied by an affidavit, if possible, to Mr. Roosevelt, at Sayville, L. I., or at No. 33 Wall Street. All who know of such suffering are invited to do the same thing.

This will make a good beginning. The best ending, however, will be a full and comprehensive investigation by Congress of the crimes against our soldiers. Our representatives in Congress are not all heartless and callous politicians. The unseemly attitude assumed by certain of our Washington employees, low as well as high in rank, has been that every wrong against the soldier that has been made public and condemned, has been either a false charge or "an unavoidable circumstance;" also, that these various blunders and sins have been of minor importance as compared with the other great things that have been done, whereas, in the eyes of the public, the vastly important and supremely urgent question has been: "Have our soldiers at the front been fed and protected and cared for in every way and in every emergency as we ourselves would wish to be dealt with if we had been compelled to carry a rifle to Cuba?"

THE DUTIES OF PEACE.

THE cessation of hostilities and the declaration of an armistice has brought relief to strained nerves and anxious hearts. Grim visaged war has smoothed its wrinkled front. The stern alarms of actual battle have ceased, but the time has not come for dallying with the lascivious pleasing of the lute. To the medical and sanitary arm of the service, new problems of gigantic import loom on the Southern horizon. For the present, at least, military governments must be maintained in all the newly acquired territory. Garrisons must be established at many points, and the Augean stables of filth and infection must be cleaned. For the latter, sanitary engineers of the first rank are required, and works commensurate with the objects to be accomplished, and permanent

in character, should be undertaken without delay.

For the medical department of the army, it will suffice to see to it that the location, sanitation, and general healthfulness of the garrisons are assured. It must not be forgotten that for us as a nation, the undertaking is a new one; soldiers accustomed to the bracing air of temperate latitudes must be carefully acclimated to tropical weather with its intense heat, drenching rains, and debilitating humidity in the midst of perennial infectious and contagious diseases. Were we pioneers in this field of work, much would necessarily have to be learned in the bitter school of experience. Fortunately for us, such is not the case. England has been solving this problem in a practical way for more than a century, and to him who will lend an attentive ear has much to teach of life-saving value. It is true that the native energy, dash, and bravery of the American soldier when fresh from his native heath can drive before him any tropical fighting line he may meet. This was demonstrated in the assault upon Santiago and has been repeated at Manila, but the secondary effects are disastrous. He cannot endure exposure to the drenching rains, the baking sun by day, and the damp ground at night; nor can he, with impunity, do the digging, the pack-carrying, the camp making, and the cooking. As was pointed out in a recent editorial in the *Philadelphia Press:* "White men, the English have learned, cannot campaign in the open air during the wet season in the tropics unless they have an army of attendants. The English expedition which went to Abyssinia just thirty years ago under Lord Napier of Magdala, had 16,000 English soldiers and 32,000 native attendants to take care of them. All English tropical expeditions are organized after this fashion. Every regiment has its waterman and its tentmen, its carriers, and its cooks. The fighting man in the tropics must be taken care of. A force of laborers, all tropical, must be hired. Instead of feeding the idle at Santiago on landing, not an able-bodied man among the natives should have been given a ration unless he was willing to work, and strict military discipline should have ended the fatal and inexcusable nonsense of precious Northern fighting material courting fever and inviting death by digging and pack-carrying when idle Cubans were standing around eating United States rations.

"If this course had been followed, while fever would have come, it would not have demoralized and broken the strength and fighting force of brave men as it did at Santiago, and assuredly will at Manila. The prediction is easy to make, for it is based on two centuries of Anglo-Indian experience—the instant General Merritt's force moves from its lines and begins active operations in the field, where the men have to get wet, unless they are provided with a plentiful supply of coolies to fetch and carry and spare the white men, tropical fever will mow a broad swath through the strong ranks and a quarter will never come back.

"These are words of truth and soberness. Every medical man and every man of tropical experience or knowledge, knew that the Santiago campaign was a terrible risk. The nation deliberately matched with fever and death for victory and won in the grim game by overmastering bravery. But for white men, nothing foils tropical fever except close personal care. If a white man in the tropics has to dig and get wet and do common labor, he collapses in all cases and dies in about one-half the instances. Unless there is to be a terrible waste of life, the Anglo-Indian plan of minutely caring for white men in the tropics must be adopted in Cuba. Any other plan is sure to end like the present collapse at Santiago due to climate, doubtless aggravated by faulty staff administration, but primarily due to climate."

AUTO-INTOXICATION, PTOMAIN POISONING, AND AUTOTOXEMIA.

THE term "auto-intoxication" or "auto-infection" is best restricted to those symptoms directly referable to the action of poisonous ptomains. Chemically, ptomains are basic substances formed as a result of *putrefactive* or fermentative processes, such as *tyrotoxicon* in cheese, milk, or ice cream; from fish, *muscarin;* from poisonous mussels, *mytilatoxin.* All micro-organisms capable of giving rise to disease from poisonous ptomains within the system may, and doubtless do, produce the symptoms which are ascribed to the infectious diseases.

Ptomains may have their origin within or without the body. We are, as yet, unacquainted with the effects of those ptomains formed in the normal body by the common colon bacillus and other bacteria

which inhabit the normal intestine. This effect, whatever it may be, is "auto-intoxication."

If we should eat a piece of cheese or pork, or should we drink milk, any one of which has undergone putrefactive changes outside of the body, it could not be properly called auto-intoxication (self-poisoning), but is, in brief, *ptomain poisoning*. On the other hand, "autotoxemia" is best restricted to a diminished or an excessive amount of a normal secretion, or to poisoning by leucomains.

An excessive amount of a normal secretion will produce autotoxemia, as instanced in jaundice and salivation, and a diminished amount of a normal secretion causes autotoxemia, as is the case in myxedema. Most leucomains are wholly inert, while others are violent poisons. Of the poisonous leucomains may be mentioned paraxanthin, methylxanthin, hetroxanthin, xantho-creatinin, and gerontin. Poisonous leucomains are found in the normal secretions and excretions, such as saliva, bile, urine, perspiration, feces, and expired air.

Again, the symptoms of poisoning by ptomains and leucomains differ very widely; in the former, usually developing within the first twenty-four hours, and accompanied by nausea and vomiting, intense pains in the epigastrium, obstinate constipation, subnormal temperature, or only slightly elevated, cold perspiration, and frequently collapse and death.

Autotoxemia develops slowly with manifold symptoms referable to the muscles (as in lumbago); in the central nervous system, as evidenced by despondency, mental hebetude, insomnia, possibly epilepsy, and also in the peripheral nervous system, as observed in hemicrania, neuralgia, and possibly multiple neuritis.

The subject of bacteriology has developed within a few years to a wonderful degree, but its invariable accompaniment, autotoxemia, is still an undeveloped field to be thoroughly explored by those who study internal medicine, and who first gain some insight into the first pathological process in disease.

ECHOES AND NEWS.

Spain's Quarantine against Her Returning Troops.—The Spanish troops returning from Santiago will land at the three ports, Santander, La Coruna, and Vigo. At each of these ports, transports fitted up as hospital ships will be stationed to receive the soldiers afflicted with yellow fever.

Artificial Albumen.—Dr. Lilienfeld announces that he has been able to produce in the laboratory, by certain chemical combinations, a synthetic substance which responds to every test of albumen, and has named it artificial albumen. Whether or not this substance has the nutritive qualities of natural albumen has not yet been determined. It is announced that researches to establish this point are proceeding.

The American Microscopic Society.—The twenty-first annual meeting of this society will be held in Syracuse, N. Y., August 30, 31, and September 1, 1898. The sessions will be held in the Syracuse University Medical College, where every facility of rooms and apparatus will be put at the disposal of the Society. An interesting program, both scientific and social has been arranged. There will be reduced rates upon the railroads from any station in New York.

The Water-supply of Cities.—The average daily water-supply, as given by the New York *Sun*, of some of the large cities of the world is as follows: London, 175,000,000 gallons; Paris, 100,000,000 gallons; New York, 290,000,000 gallons; Baltimore, 70,000,000; Boston, 60,000,000 gallons; St. Louis, 55,000,000 gallons; San Francisco, 25,000,000 gallons; New Orleans, 18,000,000 gallons. There are now in New York 50,000 water-meters, and the city collects $5,000,000 per year for its water tax.

The Degree of "Doctor of Hygiene" in Great Britain.—The following colleges and universities of Great Britain hold examinations and grant diplomas in public health: London University, Cambridge University, University of Oxford, University of Durham, Victoria University, Royal College of Physicians of London, Royal College of Surgeons of England, Edinburgh University, Glasgow University, University of Aberdeen, Royal College of Surgeons of Edinburgh, Royal University of Ireland, University of Dublin, Royal College of Physicians, and Royal College of Surgeons, Ireland.—*The Health Magazine.*

General Sternberg Demands Investigation.—Surgeon-General Sternberg has written a letter to the Secretary of War formally asking for a Court of Inquiry to investigate the charges of neglect and incompetency which inflicted so much suffering upon our soldiers in Cuba. It is thought that this request of the Surgeon-General will overcome the disinclination of the President and Secretary of War to re-open at this time the controversy between the various departments. Lieutenant-Colonel Pope, chief surgeon of the Fifth Army Corps during the greater part of the campaign of Santiago, has been ordered to Washington to report to the Surgeon-General.

He Could Not Be Turned.—A patient in an English insane asylum imagined himself dead, and nothing could drive the delusion from his brain. One day the physician had a happy thought, and said to him: "Did you ever see dead man bleed?" "No," he replied. "Did you ever hear of a dead man bleeding?" "No." "Well,

if you will permit me, I will try an experiment with you, and see if you bleed or not." The patient gave his consent, the doctor whipped out his scalpel and drew a little blood. "There," he said, "you see that you bleed; that proves you are not dead." "Not at all," the patient instantly replied; "that proves that dead men can bleed." —*New York Tribune.*

Typhoid Fever at Montauk Point.—It has been decided by the Surgeon-General of the Army to transfer all typhoid-fever cases immediately upon their appearance to city hospitals. Not only can the cold-bath treatment be more consistently carried out in this way, but the sanitation of the camp can be more thoroughly maintained. Up to the present time all the cases have been transferred to the hospitals at New Haven, Conn. In accordance with this decision the ambulance ship "Relief" from Porto Rico with 248 sick and wounded, 154 of whom were typhoid-fever cases, went direct to Brooklyn and distributed her pitiful cargo among the hospitals of that borough. All these typhoid cases developed on the transports during the voyage to Porto Rico so very soon after landing showing that the infection was acquired at the home camps. The death-rate has been about double the average mortality of this disease.

Fate of the Antivaccination Bill in Parliament.—A correspondent of the MEDICAL NEWS, writing from London under date of August 10th, says: "It has been possible by coming here to follow the fate in Parliament of the Antivaccination Bill, so roundly denounced by Sir Thomas Grainger Stewart in his opening address to the British Medical Association. As at first reported to the Commons, it did not contain the objectionable "conscientious-objector" clause referred in my first letter. This permits any man swearing to his convictions before two magistrates to escape vaccination in himself and his family. It was attached, however, and the bill went to the Lords, who made a fierce fight against the clause, and defeated it by a majority of two, in spite of Lord Salisbury's strenuous plea and Lord Lister's astounding support. Back it went to the Commons, which refused to consider an amendment, and it was finally passed by dint of "packing" the Upper House, and now only awaits the royal signature, which, of course, it will have. The Lords have been roundly abused by both lay and medical press, but their stand was a weak-kneed bluff which the Government soon called. So England goes back thirty years on this point, and it will not be long before we hear of a new Gloucester epidemic, when the whole country quarantined against the town."

Suffering on Board Hospital Ships.—The intense interest of the whole country is still fixed upon the abuses and neglect attending the ambulance ships which brought the sick and wounded from Cuba. Dr. Victor C. Vaughan, who was the surgeon in charge of the Transport "Seguranca," which brought 331 sick and wounded soldiers from Siboney to Tampa, and thence to New York, declares that his experience leads him to believe that a great deal of the distress and suffering which was found upon the earlier transports, was due to the greed of the ships' captains and stewards. He believes that every transport that left Siboney had on board plenty of good food, but it belonged to the transport, and not to the Commissary Department. It was, therefore, served only to those passengers who could pay for it. Dr. Vaughan narrates that he went to the steward of the "Seguranca" and asked him for food for the men. "Not a cracker shall you have," responded the unpatriotic steward. Dr. Vaughan, therefore, took the keys away from the steward and gave them to another officer with instructions to supply the men with whatever they needed out of the ship's storeroom. He instructed the commissary to keep account of the stores used and to pay for the same at a fair valuation. Had the surgeons in charge of transports known that they had this authority, and exercised it, their passengers might have been provided equally as well as those of the "Seguranca."

Improved Ambulance System in the Borough of Brooklyn.—A member of the Department of Health explains, as follows, the present status of the Brooklyn ambulances: "In the old city of New York the Department of Charities has had full control since 1870 of public ambulances, while in old Brooklyn the Department of Health had the power. The Corporation Counsel was asked for an opinion, which was given in May, 1898, to the effect that, according to Section 1168 of the Greater New York Charter, it devolved on the Department of Health. Then the Board of Estimate was asked for an appropriation, and it immediately gave an amount equal to the emergency. The Long Island College, Brooklyn Homeopathic, St. Catherine's, Eastern District, St. Mary's, St. John's, Methodist Episcopal, and Norwegian hospitals, at which ambulances were previously stationed, were allowed, commencing July 1st, an appropriation, and the Department of Health also included in addition to the above an appropriation for an emergency ambulance at the Kings County Hospital. At Coney Island one is maintained by the department during the summer months, and if a hospital were located in that section the ambulance-service would be maintained during the entire year. The service, as far as calls are concerned, is placed, as formerly, in the hands of the Police Department. The borough is to-day fully covered by eleven ambulances, and all accidents are attended to. In the event of any ambulances being out of their own districts, the nearest ambulance to that district will respond to any call from the uncovered district."

Alleged Increase of Hydrophobia in Egypt.—According to the London *Lancet* for July 23d, in the early days of the British occupation there were thousands of pariah dogs in Cairo, and it used to be said on all sides that rabies was unknown, but in 1886 a fox terrier at Abbassiyeh belonging to a British soldier broke the record by being the first case. Since that time, every year cases among human beings or among dogs have been reported and verified. Besides many doubtful cases the whole number up to last month comprises 36 dogs, 2 wolves, 3 horses, 2 mules, and 60 human beings, all fatal, scattered over

Egypt. Since 1893, several bitten people have gone to Paris or to Athens to be treated, and this year already 9 persons out of 15 bitten have gone to the Athens Institute. These figures are enough to show that preventive measures are required. Though there are no medical accounts of rabies in times past there are plenty of supposed cures which make it appear as if the disease were well known. Papyri contain mention of the dangers of a bite from serpent, crocodile, or dog. Charms were sold in old days to protect from these three, and there is a folk-lore story in which the wicked fairy condemned the heir at his birth to be killed by one of these three biting creatures. He destroyed a serpent which attacked him, and he and his favorite hound killed a crocodile, but the master died in consequence of an accidental bite from the dog during the fight. The modern treatment for a person bitten by a presumably mad dog in Upper Egypt is to kill the dog, extract the spinal cord, bruise the cord with pestle and mortar until a paste is made, and then to rub the patient's body with the paste. Sometimes, too, they burn the dog's hair and apply the ashes to the bite. The Bedouin make the patient eat the raw liver of the dog, and this is done, too, in the Haussa State of the Western Soudan. In Lower Egypt the favorite remedy has been acquired from the Syrians of Mount Lebanon. It is the Mylabris punctata, a dark-blue beetle used instead of cantharides, and well known in the south of France and Spain.

Service of the Pasteur Institute at Rio de Janeiro.—From April 9th, the date on which in Brazil the prophylactic treatment against hydrophobia was commenced, up to June 30, 1898, 4068 persons have applied for the assistance of the Pasteur Institute, here existing under the direction of Professor Dr. Ferreira dos Santos. Of that number, 2695 persons have been treated, 172 last year. Treatment has been refused to the persons bitten when it was discovered that the animals were not suffering from lyssa. In two instances it was subsequently discovered that persons rejected on the plea of not having been bitten by rabid animals had actually been so bitten, having shown symptoms of hydrophobia. Three other patient were rejected because they had already been attacked by lyssa when they applied for prophylactic vaccinations. Of the 2695 persons treated, 1935 had been bitten on uncovered parts of the body, and 760 through the clothing. Application was made in 10 instances by employees of the Institute on account of accidents occurring during experiments with animals; in three instances sores, resulting from other causes, have been contaminated by contact with the saliva of affected persons, and in two instances the patients have been bitten by persons suffering from hydrophobia. As for the rest, the wounds were caused in 2383 instances by dogs, in 287 instances by cats, in two instances by mules, in one by a cow, in two instances by asses, in one by a horse, and in four instances by monkeys. In 237 animals the existence of rabies was shown by the experiments; 1196 animals showed undoubted symptoms, and 1292 animals highly suspicious symptoms of the disease. The number of persons who did not await the termination of the treatment, and that of those in whose cases it was discovered that the animals by which they had been bitten were not suffering from rabies was 99. Among those included in the former class there were three who are known to have been taken with hydrophobia after leaving the Institute. In six cases of patients under treatment the lyssa made its appearance before termination of the treatment. During the treatment five patients died of other diseases. Of the 2585 persons treated, twenty died from hydrophobia, the mortality resulting from this disease being consequently .77 per cent. In these twenty cases hydrophobia appeared in nine instances within fifteen days after the treatment had been completed. Before the announcement of Pasteur's discovery the mortality from rabies, according to Leblanc, had been sixteen per cent. One thousand five hundred and forty-five persons treated were residents of the city of Rio de Janeiro; the others came from different parts of Brazil.—W. HAVELBURG, M.D., Acting Sanitary Inspector U. S. M. H. S.

CORRESPONDENCE.

THE INCOMPETENCY OF THE WAR DEPARTMENT.

To the Editor of the MEDICAL NEWS.

DEAR SIR: The bungling mismanagement and inefficient supervision of the office of the Secretary of War in the transportation of the Army of the United States to Santiago, Cuba, the promiscuous appointment of political loggerheads to staffs in the commissary and quartermaster departments, the mismanagement and delay in transporting the necessary field-hospital requisitions which necessitated so much horrible suffering of the wounded of our army after the battles at Siboney and Santiago, and the utter neglect to supply our worthy and courageous soldiers (for two days) with even a bite of food, together with the last and most horrible cruelty meted to the suffering wounded in overcrowding the returning transports with sick and wounded, and the neglect to furnish the necessary medical supplies for the relief of their sufferings, as stated by your correspondent in the MEDICAL NEWS of August 6th, calls for more than mere comment and investigation as per your editorial in same issue. Such inhumanity calls for more than a protest. I believe all medical men who read said article will rise united as one man and demand that a more capable officer should be at the head of the office of the War Department of these United States. I believe that to do our duty we should at least petition to our most capable Chief Magistrate, the President of the United States, requesting the resignation of the present incapable incumbent of the office of the War Department. In doing this I believe we express the sentiment of the whole people. I would further request that every medical journal take this matter to issue, and spread it broadcast that other nations may not judge the people of these United States wrongly. Very sincerely yours,

W. H. DUKEMAN, M.D.

LOS ANGELES, CAL., August 11, 1898.

OUR FOREIGN LETTER.

[From Our Special Correspondent.]

AN OLD MEDICAL JOURNAL—VIRCHOW'S MEDICAL REFORM AND SOME NEW ONES—PROFESSOR WALDEYER ON SEXUAL DIFFERENCES IN FETAL BRAINS—NO POLISH SCIENTIFIC CONGRESS TO BE HELD AT POSEN THIS YEAR—THE MEETING IN 1900 AT CRACOW—VIRCHOW ON SYPHILITIC LESIONS OF THE INTESTINES AND SO-CALLED SYPHILITIC ULCERATIONS OF THE RECTUM.

BERLIN, August 16, 1898.

JUST fifty years ago last month Virchow and Leubuscher began the publication of a weekly medical journal, *Medicinal Reform*, which though it lasted but a year, represents a landmark in modern medicine. It was the stormy times of '48, and the spirit of revolution was abroad. More than one European monarch had gone down before that contagious spirit of uprising that spread over Europe, as never epidemic had spread before. German thinkers were aroused, German politicians were at work on a scheme of union for Germany. German philosophers were theorizing in charmingly impractical fashion on the rights of man and reform. Reform was in the air. Virchow established the journal for the purpose of uniting medical men in a scheme for the reform of the laws regulating their positions as doctors. A good deal was accomplished; much was still wanting, but the time was not ripe. Some of the abuses that were then pointed out in the laws relating to physicians still exist, and are the subjects of negotiation between the medical societies and the authorities to-day.

After awhile came Virchow's call to Wurzburg, and with that the stoppage of the journal. Many of the earlier numbers was written by him personally, and nothing better on such subjects as the government's duty in the matter of public health has been written down to our own day. The duties of the government in the matter are stated with a clearness and precision all the more surprising, as the subject was a comparatively new one, in the extent to which Virchow would apply its principles, that they are to-day generally accepted opinions. One of the contributors to the early numbers was Traube, and the subject was the "Advantages and Disadvantages of Special Clinics." A view of another knotty problem is this, to which very little could be added in our day, though the subject has become a very vitally interesting one for us.

One of Leubuscher's articles at the beginning of the volume was on "Medicinal Pfuscherie" (Medical Quackery). Another of Traube's articles is "Shall the Directors of Hospitals and Clinical Teachers Be Allowed Only a Consultation Practice?" questions which would be of interest in our day, and which much more ambitious weekly journals than this little one (whose first number consisted of four quarto pages containing one advertisement), would be very ready to receive into their columns.

It is a little discouraging to think that the great advances of the last fifty years have carried us not much farther toward the solution of these great questions of medical rights and privileges than medical men were then. Virchow's appeal for union and cooperation in the common cause would be as opportune almost to-day as it was in that transition period of '48. Virchow reminded the doctors of that period that it availed nothing to belong to a great profession, if the rights and privileges of that profession were not upheld by the concerted action of its members. *Paullum sepultæ distat inertiæ celata virtus.* Merit hidden under a bushel, might as well be helpless inactivity.

July, as the mid-year, has seen the first appearance of a number of brand new German medical journals, of which the most prominent are the *Journal of Dietetics*, of which Professors Von Leyden and Goldscherder of Berlin are the editors, and *Beiträge für Geburtshilfe und Gynækologie*, of which Professor Hegar of Freidburg is the editor. Two new journals are announced to appear later, a *Jahresbericht in der Gebiete der Neurologie*, to be issued in January next with Professor Mendel of Berlin as editor, and a *Vierteljährschrift für Kriminal Anthropologie und Kriminalistik* with Dr. Hans Gross of Leipzig as editor, and a number of prominent criminal anthropologists as collaborators. This last journal takes the place of the one that I mentioned some time ago in these columns, as having ceased publication because its editor had been giving his distinguished collaborators some practical lessons in criminal anthropology. He is at present enjoying unrivalled opportunities to study criminalistics in one of the large German prisons at the expense of the State, the conviction having been for swindling. His collaborators gained some unique experience in practical dealing with ingenious criminals. That he was something of a genius may be gathered from the fact that he should have recognized a new field in German medical journalism (not an easy thing in the present crowding of the medical printing world) which others find it expedient to occupy, now that his enforced retirement (for reasons of State) leaves the opportunity open.

Professor Waldeyer presented at a recent meeting of the Berlin Anthropological Society two pairs of fetal brains in which the conditions as to weight and age were so alike that some conclusion as to the absolute comparison between the development of the brains of the different sexes seemed to be justified. In the first pair the male fetus was .264 meters long, weighed 362 grams and the brain weighed 32 grams. The female was .256 meters in length, weighed 850 grams and the brain weighed 30 grams. In the second pair the male fetus was .400 meters long, weight 1185 grams, brain weight 175 grams; female .400 meters long, weight 1188 grams, brain weight 165 grams.

Professor Waldeyer has reported somewhat similar conditions before, and though the number of observations so far made are scarcely sufficient to justify a definite conclusion, yet he considers them to have certain manifest indications as to the comparative brain value of the two sexes at a time when education and training has not yet come in to vitiate conclusions. With fetuses practically the same size and weight there is distinctly more brain substance in the male than the female. This

is very striking in the second case where the female fetus is actually slightly heavier, and where, besides, the brain convolutions were somewhat farther developed than in the male. Professor Waldeyer asks for the sending of fetal brains or the careful observation of them by others in this direction, as of course the opportunities for such observations are extremely rare.

As the prohibition by the Prussian police department of the attendance of foreigners at the Polish Congress of Naturalists and Medical men would have made serious lacunæ in the program of the congress, it was decided not to hold it at all this year, as I mentioned in my last letter. The next meeting will be held at Cracow in 1900, during the fêtes in honor of the five-hundredth anniversary of the foundation of the University of Cracow. For the moment the Prussian Government has secured its object and prevented the assemblage of the Slavs in Germany. Whether this interference with a scientific congress will not have a greater effect on reactionary Slavish sentiment than anything the proceedings of the congress might have been able to effect remains to be seen.

Meantime there is as good as an official announcement of the fact that the United Slavs, Czechs, Poles, and Russians are going to make the meeting in 1900 memorable. They have, of course, an inspiring occasion, the half-millennial celebration of one of the oldest universities in Europe, whose fame was at one time world wide. No pains are to be spared to show the world what the Slavs have accomplished in the past, and despite unfavorable conditions, are accomplishing at present, in science and the arts of education.

Professor Virchow has been lecturing on the pathology of the intestines on Saturday during the semester, and at one of the final lectures of the year came to the subject of syphilitic lesions. His main attention was directed to the series of lesions ulcerative in character and leading to stricture of the rectum, which are usually set down as syphilitic in origin. Some few of these, he thinks, may be caused by syphilis, since they have most of the pathological characters of the disease, but most of those usually pronounced syphilitic clinically and even on the post-mortem table are not, but are due to an obscure pathological process or series of processes, whose explanation will constitute a distinct advance in the pathology of the intestines.

Notwithstanding his immense experience with post-mortem specimens Virchow has never seen a gumma (or rather, as he insists gummi, since there is no such Greek word as gumma) of the intestines. He does not, therefore, deny that gummata of the intestine occur, but thinks they must be extremely rare. It would be in a gummatous process that these ulcerative strictures of the rectum would occur if they were really syphilitic, but they are entirely too frequent for that. Besides their almost exclusive limitation to women point to the fact that there is something more than a syphilitic process at work. This opinion that these so-called syphilitic strictures are not such is gaining ground. Professor Wölfler, at Prague, thinks that the number of them attributed to syphilis is far above what it should be, and Professor König, here at Berlin, says that to his mind they are due to a mixed infection after gonorrhea of the rectum, occurring so frequently in women because gonorrheal secretion finds its way so easily over the perineum to infect the mucous membrane at the anus.

SOCIETY PROCEEDINGS.

BRITISH MEDICAL ASSOCIATION.

Sixty-sixth Annual Meeting, Held at Edinburgh, July 26, 27, 28, and 29, 1898.

[Specially Reported for the MEDICAL NEWS.]

(Continued from page 255.)

SECTION ON SURGERY.

SECOND DAY—JULY 28TH.

DR. DAVID NEWMAN of Glasgow opened the subject of the treatment of

SEPTIC INFECTION OF THE URINARY TRACT,

confining his remarks to the kidney. Renal sepsis may arise from the blood- or lymph-streams or there may be "acute septic nephritis without suppuration," infection taking place usually from the ureter. The bladder is not easily rendered septic but once infected, the distribution of the lymph-supply spreading to the kidney is not difficult, and may occur without the intermediary of the ureter. The chief point in treatment is prophylaxis.

DR. ROVING of Copenhagen stated that two groups of bacteria affect the passages, those which decompose urea, pus-cocci, other diplococci, and bacilli, some non-pathogenetic, and those which do not decompose urea, such as the bacillus coli. In bacteruria with no cystitis, the bacillus coli occurs; when cystitis appears, it is due to the first class, staphylococci. Prevention is the chief safeguard. DR. MELCHIOR of Copenhagen read a report of fifty cases of infection in which the colon bacillus was by far the most frequent microbe found. In most cases it is introduced by instruments. MR. BRUCE CLARK held that there must be an abrasion of the mucous membrane in order to permit entrance of bacteria. Cocci first appear and these are later replaced by the bacillus coli.

DR. MELCHIOR reported the case of a girl on whom he operated for a large sarcoma of the neck. Finding it impossible to remove the growth, he used repeated applications of electrolysis (500 milliamperes for 5 minutes under anesthesia). The whole growth sloughed away and had not returned.

THIRD DAY—JULY 29TH.

DR. ROVSING of Copenhagen opened the proceedings with a paper on

OBSCURE HEMORRHAGE FROM THE KIDNEY AND ITS TREATMENT BY NEPHROTOMY.

He began with a description of several cases of bleeding from one kidney as shown by the cystoscope, for which there was no assignable reason. In two of them the bacillus coli was found in the urine, but the speaker thought this organism held no etiological relationship to

the diseased condition. It is possible that displacement of the kidney may have had something to do with the bleeding by reason of venous engorgement. In two of his cases he practised nephrotomy with good results so far as cessation of hemorrhage was concerned.

MR. PARRY of Glasgow in speaking of

SPASMODIC TORTICOLLIS

described three cases in which the deformity was persistent and due to spasm of the muscles, not their permanent contraction. He cured all the patients by resecting a portion of the spinal accessory nerve on one side and severing the cervical plexus on the other, thus removing the spasm of one sternomastoid and the opposite occipital muscle. No paralysis resulted.

MR. NOBLE SMITH of London had treated sixteen cases in this way and regarded the operation as well established, but DR. KOCHER of Berne said that he had often seen recurrence. He now divides the sternomastoid on one side and the occipital muscles on the other.

MR. JONATHAN HUTCHINSON, JR., of London gave an account of a case of

TRIGEMINAL NEURALGIA TREATED BY REMOVAL OF THE GASSERIAN GANGLION.

There are two routes of approach to the ganglion: (1) By resecting temporarily the zygomatic arch and trephining about the foramen ovale; (2) by trephining the squamous plate and lifting the temporal lobe without injuring the dura. It is not necessary to ligate the middle meningeal artery. The temporal route is the operation of choice since it is attended by less risk and less deformity.

MR. ROBSON of Leeds preferred the second method, thinking a beneficial effect may be secured by forcible stretching of the third branch of the trigeminus.

DR. BRUCE of Dingwall, in speaking of

SCIATICA,

claimed that it is always due to disease of the hip-joint, occurring especially in those with uric-acid diathesis. His treatment is directed along this line.

DR. KENNEDY of Glasgow presented notes of cases of

TRAUMATIC MUSCULOSPIRAL PARALYSIS FOLLOWING FRACTURE OF THE HUMERUS.

Improvement ensued in every case after freeing the nerve. Delayed return of muscular power in certain instances may be attributed to the muscles rather than the nerves.

MR. MUIRHEAD LITTLE, treating of

COXA VARA,

described two varieties, one in children caused by rickets and the other in young persons produced by carrying heavy weights. The X-rays are of material assistance in making a diagnosis. The best treatment is subtrochanteric osteotomy.

The paper by ADAMI of Montreal on the

BACTERIOLOGY OF PROGRESSIVE CIRRHOSIS,

deserves a more extended notice than was given in a previous letter. In it, he says that in a large number of cases of the disease in man there may be found largely within the liver-cells, and in the lymph-spaces in the new formed connective tissue a peculiar, minute form of micro-organism presenting on proper staining the form of diplococcus surrounded by a faint halo; on deeply staining a rather obscure ovoid body little distinguishable from tissue detritus. In infective cirrhosis in cattle, the same organism is present in the tissues and shows the same staining characters. He has, moreover, been able to isolate the organism from the liver, bile, and lymph-glands of at least thirty infected cattle, and it is polymorphous, appearing as a small diplococcus when grown on broth, and as a distinctly bacillary form on solid media. The organism is pathogenic for laboratory animals, and in them is seen in the hepatic cells and elsewhere. In a case of atrophic cirrhosis in man he has been able to isolate from different organs a micro-organism with similar cultural characteristics. This discovery, if confirmed, as the author says, put a new phase on the study of hepatic cirrhosis. We get satisfactory explanations of the splenic enlargement and the frequent right-sided pleurisy, and we may be on a fair road to explain why ascites occurs in one case and in another, jaundice, depending on whether the organism sets up a peritonitis or attacks the bile-ducts and liver-cells. Adami does not believe that it causes cirrhosis only; it may be found to excite other disturbances in the liver and elsewhere, indeed to be capable of setting up a septicemic condition.

SECTION ON MEDICINE.

SECOND DAY—JULY 28TH.

Consideration of the

OPEN-AIR TREATMENT OF PHTHISIS

was continued from the Wednesday to the Thursday session on account of the inadequacy of the discussion. Following DR. DAVIDSON'S paper upon

SOUTHERN CALIFORNIA

as a resort for consumptives, the subject was taken up by DR. CALDWELL of Belfast ,who thought this treatment might be both preventive and curative. The former is not sufficiently practised. There is no specific drug, but the open-air method, if carried out, produces good results unless the cases at the outset have advanced too far. The treatment, which must be thoroughly carried out or not at all and away from friends, consists of continuously living in the open air, day and night, great attention to diet and exercise regulated to the patient's physical powers. DR. GUILLEMARD stated that the winter climate in the uplands of South Africa is perfect and treatment very satisfactory. DR. SIDNEY JONES of New South Wales confirmed these assertions and called attention to the fact that both in Australia and Africa, the climate varies greatly in different parts and must be considered in the choice of locations. DR. THORNE of London recited the case of a woman advanced in phthisis who, unable to go abroad, took the treatment as far as possible in the gardens of the metropolis and recovered. Other similar experiences were reported.

SIR WILLIAM BROADBENT in opening the question of the

SIGNIFICANCE AND CONSEQUENCES OF DIFFERENT STATES OF VASCULAR TENSION, WITH THEIR MANAGEMENT

limited his remarks to arterial tension. Vascular tension depends upon the force and quantity of blood delivered at each systole and on peripheral resistance. The pulse is the guide and four points should be noted regarding it: (1) the size of the vessel; (2) its states between beats; (3) the character of the rise of each stroke, and (4) the force required to obliterate it. Low tension is often found in long-lived persons, but it is found in fever and may be the cause of lessened nutrition. It is associated with debility, neurasthenia, and often with epilepsy. High tension often runs in families and may be seen in young persons. Among its effects are hypertrophy and dilatation of the heart, thickening and atheroma of the aorta and valves. Variations of vascular pressure are of universal application in all forms of disease and furnish important therapeutic indications, *e.g.*, the blue pill in neurasthenia with high tension. Convulsions occur in many high-pressure states, but they are not necessarily the result of the tension, as in uremia. In epilepsy when the tension is low the prognosis is less favorable. As regards Cheyne-Stokes' respiration it always occurs with high tension.

When instituting treatment, the essential origin must be learned. In low tension it may be some vice of nutrition, digestive derangement or absence of glandular secretion, especially the suprarenal. The most useful drugs are eliminatives, digitalis, and caffein. In high tension, the chief cause is toxemia. Diaphoretics, baths, exercise, diuretics, and purgatives are indicated and most importance is attached to mercury, the old contraindication in uremia being now exploded.

PROFESSOR BRADBURY of Cambridge said that treatment of low tension is treatment of its cause, which is found outside the vessels; palpitation of nervous origin is the chief symptom. High tension is dependent on vascular or cardiac conditions, and is important in its causal relations to disease. Poisons, syphilis, gout, lead, cause contraction and produce the pressure. Much may be done to alleviate the condition; in fact, improvement may always be looked for. The essential object is elimination of toxic substances and prevention of their reaccumulation. Potassium iodid and purgatives are useful but not in emergency when vasodilators, nitroglycerin, amyl nitrate, erythrol, tetranitrate may be used.

DR. SAVILL drew attention to an important sequence of high tension, *viz.*, arterial thickening, which he calls "arterial hypermyotrophy." He found it in fourteen per cent. of necropsies. The change is a true hypertrophy but may be accompanied by pathological alterations. DR. HAIG thought the time had come when the right name should be given to the toxin of high tension. It is uric acid.

DR. DRUMMOND of Newcastle read a paper on

ETHER PNEUMONIA,

in which he said that cases of death after operation are often attributed to sepsis when they were really due to this condition. He narrated a fatal case, necropsy showing engorgement and edema of the lung. Pulmonary disease predisposes and it is especially apt to occur after abdominal operations.

SECTION ON DISEASES OF CHILDREN.

FIRST DAY—JULY 27TH.

DR. JOSEPH BELL of Edinburgh, President of the Section, opened the proceedings with some preliminary remarks, welcoming the members of the section to Edinburgh. In a general way he deprecated the too general custom of sending sick children into hospitals to the exclusion of home-treatment. The very poor who have dirty homes and who starve their children, may have a sort of reason when they bring their children to light, water, and food; but the great middle class should be reminded of their responsibilities. A large number of operations which crowd the hospital work should be done at home. Mastoid cases, tuberculous glands and joints, radical cures of hernia, phimosis, need not be taken to hospitals for proper treatment. If the child cannot be made aseptic in a decent home, the surgeon is not up to his work.

A discussion upon the

TREATMENT OF SPINAL CARIES

was opened by DR. VICTOR HORSLEY. The author devoted his paper more especially to the subject of tuberculous osteitis as a cause of deformity, and its treatment. Early operation is indicated in these cases. The diseased bone should be freely removed and free drainage insured by laminectomy and, when necessary, removal of the pedicles. This must be followed by temporary fixation to prevent deformity. This is secured by elastic extension. DR. ROBERT JONES of Liverpool deprecated too early operation. Elastic extension when strong enough to extend the spine is, as a rule, intolerable to children. Early cases can be effectively treated by placing them in a recumbent posture with the back in lordosis, the spine being supported in this position and the hips resting comfortably. The lordosis must be maintained to a certain degree by apparatus when the patient assumes the upright posture. He reported ninety-four cases of immediate reduction. DR. MURRAY of Liverpool opposed the immediate reduction of deformity in these cases. Application of that treatment in fourteen cases had been unsuccessful, deformity recurring in all. DR. TUBBY of London reported thirty cases in which immediate reduction of deformity had been applied by him with the result that four spines had been permanently straightened and the majority of the other cases greatly improved. DR. NOBLE SMITH of London disapproved of taking away the pedicle and laminæ which, in these cases, were frequently the only sound parts of the vertebræ, but thought it advisable to remove diseased bone when it could be easily reached. DR. CHURCHILL of London and DR. LUCKHAM of Salisbury advocated expectant treatment and good hygiene. The remainder of the session was spent in the discussion of surgical subjects as follows: The treatment of club-foot, hare-lip, cleft palate, dislocation of the hip-joint, occurring in the course of infectious diseases, and the clearing out of the mastoid antrum in infants and young children.

SECOND DAY—JULY 28TH.

MR. JONATHAN HUTCHINSON opened the discussion on

CERTAIN ASPECTS OF CONGENITAL SYPHILIS.

He discussed certain late manifestations, especially lesions of the bones and organs of special sense, and insisted that these were very rare after the age of twenty. The diagnosis of these cases involves great difficulty. The usual routine drug treatment of the disease in infants is useless. DR. H. ASHBY of Manchester discussed certain cases of doubtful character, involving lesions of the brain and other internal organs. Such cases were those of certain forms of anemia, enlarged spleen, hydrocephalus, and other conditions affecting the nervous system.

THIRD DAY—JULY 29TH.

DR. D. B. LEES of London opened the discussion on

RHEUMATIC HEART DISEASE IN CHILDREN.

The great mortality of this disease among children is in striking contrast to the same condition in adults. Dilatation is usually present in subacute, first attacks, even when pyrexia is slight and arthritis is not present. Effusion into the pericardium and endocarditis are not usually the causes of fatality. Indeed, these conditions seem to affect the mortality very little. Plastic pericarditis and dilatation, however, play a very important part in the fatal results. DR. OSLER of Baltimore, continuing the discussion, thought it very important to guard against repeated attacks of rheumatism. DR. EWART of London showed diagrams illustrating the point that in dilatation fluid was always present and emphasized the importance, from a diagnostic standpoint, of spinal dulness.

SECTION ON PSYCHOLOGY.

FIRST DAY—JULY 27TH.

The President, DR. T. S. CLOUSTON, opened the proceedings with an address on

NEUROSES AND PSYCHOSES OF DECADENCE.

A large number of the neuroses of decadence may be looked upon as premature senility and nervous death before its allotted time. Man's normal average life may be divided into three periods of twenty-five years each. During the first quarter of the century his body is growing and his functions maturing, the last organ to attain psychological perfection being the brain. During the second period, the fullest muscular action and the highest resistive power against disease, and the most reliable and intense mentalization are found. During the last period, a slow process of retrogression and decay sets in and goes on until the psychologic ending of death is reached. As during development one organ or function may lag behind its normal maturation time in reaching perfection, thus constituting a neurosis from unrelational development, so during decadence premature decay in individual organs and functions may occur, constituting neuroses through unrelational decadence. One man's trophic energy fails at fifty-five. He then loses three stone of flesh and falls a victim to the first severe bronchial catarrh that attacks him. The cardiac innervation of another fails at sixty and influenza cuts him off. The memory of another quite gives way at sixty-six, while another loses original volitional power at seventy, so that he cannot manage the simplest business.

The cessation of the great reproductive energy at the climacteric period in both sexes is attended by such frequent nervous and mental disturbances that in their lesser degrees they are commonly regarded as normal rather than abnormal in their character. During the barren period which follows the climacteric, which is a period of decadence, the human animal becomes subject to many diseases and defects that are incidental to this period. The last epoch of all, that of vascular disease, nerve-cell, and fiber degeneration, is one necessarily attended by many neuroses and psychoses. Then it is that senile endarteritis, fatty vessels, atrophies, softenings, and senile diminution come on.

The life history of the neuron and the sheathed nerve-fiber in their stages of growth, development, and decadence, histologically and functionally, has yet to be written. The very important part of such life history would be the account of the degrees of their reaction to different stimuli and susceptibility and power of resistance to the causes of different kinds of diseases at different ages and under different conditions. The effects of stimuli, and of poison, on the nutrition as well as on the kinesia of nerve-cells are certainly different at different ages of life. Sudden loud noises, or the excess of oxygen carried by blood at temperatures over 100 degrees, send many young children into convulsions but will have no effect upon boys of ten. The pychoses we lump together under the name of delirium, which is easily produced in childhood by temperature or by nerve-toxins circulating in the blood, but it is not so readily produced in the later period of life by the same causes. On the other hand, the nerve degenerations and more severe disturbances of function are far more apt to be set up in the senile periods of life by alcohol and other nerve-toxins than in early life. Such changes of structure or of function as occur in the natural growth, development or decadence of the neuron or sheathed nerve-fiber, cannot properly be maintained as disease. The imperfect observation, attention, and reasoning of the child of three is no psychosis any more than its difficult equilibration at eighteen months is a motor neurosis. So the weakened memory and the lessened force, origination, and volition of the man of eighty is no psychosis, nor do his less firm grip of the ground and his uncrisp articulation constitute motor nervous diseases. The wondrous and mysterious process of innate progression of structure and function whereby the neuron gradually acquires the capacity of exhibiting the energies we call coordinated motion, sensation, and mentalization, certainly depends on a hereditary potentiality within it together with favorable conditions of environment. If this potentiality is in any way faulty, we know that the organism is apt to suffer from the developmental neuroses in various forms. The process of decadence also implies a potentiality to be carried out in natural and physiologic fashion.

Though bad heredity does not come in so powerfully in decadence as at development, it does operate in some cases and thereby brings on decadence or disease before its time. Operate it must, for all the recent investigations into the conditions that conduce toward centenarianism and prolonged life point to heredity as being by far the most powerful cause. The answer to the question, How to live long? seems to be, Have an ancestry that did so; but I think heredity operates in a different way in decadence from what it does during development. In the one case, it is the sword that smites the potentially unfit and so stops the reproduction of the bad stock; it is Nature's chief means of weeding out the organisms that do not make the physiologic ideal she sets up in all species; it is then an actively destructive force, but in the period of decadence bad heredity is more like the weakening of the supports and roots that keep a full-grown tree from being blown over by the storms to which it is exposed from without. A tree in a sheltered spot, though spindly and not well rooted, may live long, so a man with a nervous heredity, if he has come safely through childhood and adolescence, may, with care and obedience to Nature's laws, live to a good old age; but if he drinks too much, or carries with him an old syphilis gland, or has to work too hard, or has occasion to worry much, he has not the staying power to resist such things. With a bad heredity in his nerve-centers he falls a victim to general paralysis, locomotor ataxia, brain-softenings, climateric melancholia, or senile dementia during decadence. The functional nervous explosions of convulsions are the most deadly of the developmental neuroses; the organic vascular-neurotic destructive lesions of brain-softenings and apoplexy kill most frequently after fifty.

We shall not be able to put on a really scientific basis the diseases of decadence until we know the exact steps in the normal process of decay of structure and function in every tissue and organ. The actual number of neuroses in any given field of the microscope during the senile period of life is fewer than in youth, such as is seen in brain sections from dementia. We know also that mentally their functions have lost much in quality and intensity. Different men decay mentally in different ways, but taking the majority the process begins at the memory of names and things that have no associated ideas, the mere labels and tickets that have no descriptive meaning. Place names and personal names are examples. Then there comes a diminution of the affective faculties, with a lowered intensity of poetic and idealized images, and also of things and of feelings. This, no doubt, accompanies a lessened sexual and reproductive energy. What is the latest age at which a man or woman can really "fall in love?" would be a proper and very interesting psycologic inquiry. Then comes a time when mental energizing generally gets slacker, when originality and spontaneity cease to be all powerful. The reasoning faculty weakens at a later period still. The highest of all departments of mind, the self-control, the volition, the mental inhibition generally, with the moral faculties, suffer as real senility advances. Emotionalism, irritability, lack of perseverance in action, and even immorality in speech and action are then met with. Every one of these steps in mental decadence must be correlated to physical alterations in the neuron. The old man's gait and speech both show lack of output in the motor cortical areas and lack of fine coordination of muscles. The whole body shrinks in volume except the less organized fat-cells in some cases.

I have known cases with a bad neurotic heredity, in which men had drunk hard in youth, but with apparent impunity, and stopped drinking when about forty, yet after fifty have passed into an alcoholic dementia. No doubt the cortical tissues resisted the toxic effects till decadence set in and then a something destructive from the old alcoholic poisoning killed off their higher energizing. I have known many cases where men have acquired syphilis in youth or middle life, and its germs have laid absolutely harmless in their brain cortices till they begin to turn the corner of life, when the resistance of the tissues becoming weakened, they became insane or paralyzed, or developed various forms of ataxia or aneurisms. It is well-known that plumbism is more common in men of fifty or sixty than between twenty-five and forty.

It cannot be doubted that the brain-tissues regulate by innumerable vasomotor centers their own blood-supply; and there can be as little doubt that the nutrition of other walls is also regulated from centers in the brain. No doubt in most cases of apoplexy from vascular disease, there is also some amount of surrounding nerve degeneration. There is a solidarity throughout the whole brain through which a tissue change seldom occurs in one organ, or system, or center, or envelop without some amount of pathologic change in some or most of the others.

An elaborate discussion then followed on

SUICIDE IN ITS PSYCHOLOGIC AND SOCIAL ASPECTS,

by the reading of several papers, followed by general discussion. A number of papers were also read upon the "Therapeutic Effect of Thyroid Extract."

SECTION ON NEUROLOGY.

The scientific work was begun by PROFESSOR FERRIER, who, in an elaborate paper, opened the discussion on the

PALLIATIVE TREATMENT OF CEREBRAL TUMORS.

It is not necessary to enlarge upon the general dangers of cerebral tumors, but the specific effects that each indidual cerebral tumor produces is always of interest and serves more and more to assist in their localization. He then gave a brief sketch of the progress of cerebral localization during the last fifteen years. This progress had enabled surgeons to operate at the present time upon subjects in whom operation was hardly permissible not many years ago. Aseptic surgery has also broadened the field of the surgical treatment of tumors of the brain. There still remains, however, one class of tumors upon which operation is not permissible, *viz.:* those at the base of the brain. In certain cases, however, it is quite permissible to give the patient the benefit of certain medicinal remedies before resorting to operative procedure.

DR. DERCUM of Philadelphia, in the discussion which

followed, advocated the use of potassium iodid in inoperable cases as a palliative measure, especially in glioma. In his hands, oxytuberculin, which he has tried in a number of cases and in which he had pushed the treatment to its fullest application, had absolutely failed. DR. JOSEPH COLLINS of New York congratulated PROFESSOR FERRIER upon the excellent success of his treatment and pointed out the fact that his statistics show twice the percentage of cures obtained by other operators and discussed the efficacy of potassium iodid as a palliative measure. A general discussion then followed, in which the treatment of headache and vomiting, which usually accompany cerebral tumors, was presented; also, the question of operation in tuberculous growths.

SECTION ON PHARMACOLOGY AND THERAPEUTICS.

FIRST DAY—JULY 27TH.

The president of the Section, DR. J. O. AFFLECK, opened the proceedings by an address on the

PROGRESS OF THERAPEUTICS.

He did not propose answering the celebrated question of the great Scottish philosopher, Sir William Hamilton, "Has the practice of medicine made a single step since Hippocrates?" for that had been satisfactorily answered by the lamented Warburton Begbie at the last meeting of the Association at Edinburgh in 1875. Since that time the number of new remedies has been multiplied enormously, chiefly by the adoption as therapeutic agents of substances which organic chemistry has so richly provided, the virtues of many of which are beyond all doubt. An illustrative instance might be cited in the power of salicin, and salicylic acid and its compounds, to lessen the pain, and in many cases, to shorten the attacks of acute rheumatism. The groups, too, of synthetic analgesics, antipyretics, and antiseptics have furnished us with substances which, while requiring at all times care and judgment in their selection and administration, are among the most widely employed and efficacious of the resources for treatment placed in the physician's power. A therapeutic measure of eminence is the method of treating stomach disorders by lavage, a plan which owes its origin to Professor Kussmaul. An entirely new field of therapeutics has been opened up by antiseptic surgery. The employment of various forms of baths is now gaining much wider and more practical recognition, and the application of regulated exercise in the treatment of heart disease by the Oertel system, or by the more recent Nauheim method, has been found to yield excellent results in many conditions of cardiac enfeeblement with or without valvular disease. The discovery that the introduction of fresh thyroid into the system of a myxedematous patient is followed by the rapid disappearance of all the symptoms, may justly be regarded as one of the greatest triumphs of modern times, while it has opened up a field for further effort in similar directions which is being assiduously cultivated. Of no less importance and with a still wider range of beneficent results, are the means which bacteriological investigation has placed within our power of identifying specific organisms in infectious diseases and observing their life-history and toxic properties. The way has thus been opened for the scientific study of immunity and this again has resulted in the discovery of protective and curative antitoxins, of which that of diphtheria is the most outstanding example. The testimony which has been borne to the value of this treatment in that dreaded malady has been universal.

The beneficent work of nurses is universally recognized and appreciated by the public as well as the profession, and is happily now made available for the poorest of the poor.

It is not too much to assume that the generation that ends with the century now closing marks an era in therapeutic progress not witnessed in any corresponding period during its course, if, indeed, ever before. It can scarcely be doubted that thereby the average of life has been lengthened, and it is certain that the pains and miseries of disease and death have been wonderfully lightened.

A discussion upon the treatment of

DISEASES OF THE STOMACH.

was then opened by DR. HERSCHELL. PROFESSOR C. A. EWALD of Berlin gave an elaborate account of the various forms of treatment of gastric diseases which he has used and is still using, but deprecated the over-use of mechanical instruments in diseases of the stomach. DR. R. SAUNDBY advocated, in dyspeptic cases, the advantages of absolute rest in bed. The only sign of ulcer of the stomach which can be relied upon is hematemesis. When this is absent no one is justified in diagnosticating ulcer. Too prolonged feeding by the rectum is a mistake. In this connection Professor Ewald remarked that if the patient who is undergoing rectal feeding loses his pain it points to ulcer. If the pain continues the case is probably a neurosis. The discussion of the treatment was continued in its various phases by numerous speakers. DR. CRAWFORD RENTON of Glasgow discussed the subject from a surgical standpoint.

DR. LOCKHART GILLESPIE then read a short paper on

THE ACTION OF STRONTIUM IODID AND BROMID GIVEN IN COMBINATION IN EXOPHTHALMIC GOITER.

All the patients treated were deaf and dumb, but rapidly recovered under the effect of these salts and experienced no discomfort from large doses.

SECTION ON TROPICAL DISEASES.

The interest in this newly established section of the Association was shown by the large attendance. Representatives were present from France, Italy, America, British Guiana, Central Africa, West Africa, India, China, Malay Peninsula, Hong Kong, Sumatra, and the treaty ports of China and Japan. The President of the Section, DR. PATRICK MANSON of London, delivered an address on the

IMPORTANCE OF A KNOWLEDGE OF TROPICAL DISEASES.

Many of the so-called tropical diseases are absolutely restricted to tropical latitudes and in their native haunts assume phases peculiar to that climate. Many of these countries are not only teeming with an immense native population, but are also being rapidly invaded by the Cau-

casian race. The importance of this subject can scarcely, therefore, be overestimated. The extensions and progress of this branch of medicine during the last twenty years, more especially since Laveran's discovery of the malaria parasite in 1880, have been so great that the study of tropical medicine has become a life's work in itself. Every year the volume of discovery increases, new fields of inquiry are being constantly opened up and the pathological fauna and flora are found to be infinitely more numerous than their congeners of cooler climates. As a special tropical section we have three distinct functions to fulfil. In the first place, we must work for the affiliation and organization of the five or six thousand British practitioners who more or less directly are interested in tropical practice. Five or six thousand is a numerous body; such is its magnitude, however. Secondly, we must insist that those who propose to join our ranks in the future are properly educated in our special branch. We all of us feel acutely the backward state of our educational system in its bearing on tropical medicine. There is not one of us who can not pillory himself with the recollection of lives that perished, entirely owing to the lack, on our part, of the elementary knowledge of tropical medicine. Lastly, we have to discuss the problem of tropical disease. That which has been accomplished has but served once more to show that there is no finality in research; the higher we rise the wider becomes the horizon. Laveran's discovery has illuminated many things that were dark before but it has also opened out new problems and shown dark spots of ignorance hitherto unsuspected. Beyond that which Ross has just told us, we still know absolutely nothing of the malarial parasite as it exists outside the human body. Similarly, we are still in absolute ignorance of the location and of the physical features of the malaria parasite while latent in the human body, or of the exact physical conditions that cause it, after months, or even years, to spring once more into active pathogenic life.

That other great tropical disease, or rather group of diseases, which we call dysentery, is still, as regards many of its forms, their causes, and their treatment, a sealed book. The pathology of liver abscess is still, as it has ever been, *quaestio vexata*. We just begin to know a little about the symptoms, epidemiology, and pathology of beri-beri; we do not know its cause. There is plenty of work for us to do. These are not a tithe of the problems in tropical pathology calling for our consideration. In all pathology there is no such field for fruitful, original research and discovery as tropical medicine.

THE CLASSIFICATION OF TROPICAL FEVERS

was then taken under discussion. The tendency of the thought was to separate malaria from climatic fevers and to differentiate a class apart from either. The subject of ardent fever was keenly taken up and many expressed the belief that the recent theory that would attribute it to infection was not confirmed by experience in India. The fact was brought out that even in latitude 66 degrees north, *viz.*: on the shores of the Gulf of Bothnia in Sweden, attacks of malaria are not unknown. The high death-rate in Africa from black-water fever was presented by Dr. Sanborn, who expressed the opinion that the disease is not an aggravated form of malaria nor due to the influence of quinin. It is most probably a specific disease allied to the hemoglobinuria of cattle, caused by a parasite which has been classed between protozoa and bacteria.

SECTION ON DERMATOLOGY.

FIRST DAY—JULY 27TH.

The President of this Section, DR. W. ALLAN JAMIESON of Edinburgh, in his opening address, dealt with the subject of

REST IN THE TREATMENT OF DISEASES OF THE SKIN.

Various states of unrest calling for the application of this principle were referred to, over-action of the glands and appendages being exemplified in hyperidrosis, seborrhea, and ichthyosis of the nerve-supply in hyperesthesia and pruritus. The inflammatory diseases, eczema, acne, and furunculosis, provide exemplification in another class. Here, the speaker took occasion to refer to the admirable results obtained in erysipelas by the use of ichthyol in strong ointment (20 to 50 per cent.). Spread of the disease is limited and constitutional effects much lessened. In scleroderma pigmentosum, rest and protection from light offer the best results in treatment. [The President later exhibited a child in whom this unmanageable affection had been stopped in its lethal course by the use of ointment containing amber and of thick brown veils, thus preventing access of the sun's rays to the skin.] Even diseases due to parasites alone, tuberculosis, pediculosis, scabies, are often benefited by judicious application of the principle of rest.

After the address the Section adjourned to the Royal Infirmary to attend an exhibit of cases, the best feature of many recent dermatological congresses. Both in numbers and in selection the exhibition proved its worth. Admirable hints as to treatment were dropped in the course of the informal discussion, and contending opinions fairly harmonized. Two cases of scleroderma were shown; one treated by Unna's ointment of bichlorid of mercury (gr. ii-iv–℥ i), the other by the salve and massage, showing striking improvement. One case treated by iodid of potash showed no amelioration whatever. Apropos of a case of leprosy, UNNA of Hamburg remarked that laboratory experience had led him to the use of caustic alkali solutions for the removal of nodules from the face and other exposed parts. The alkali is used in baths as well as in solution or ointment on the skin. Several cases were shown of Duhring's dermatitis herpetiformis in its varieties, the bullous case being assigned by observers to the pemphigus group. Four cases were presented of so-called lichen ruber, two of which UNNA and BOECK of Christiania unhesitatingly classed as parakeratosis variegata, pointing out the ringed character, the rosy, slightly scaling primary lesion distributed on trunk and extensor surfaces chiefly. MALCOLM MORRIS thought several of the cases might be called an early stage of mycosis fungoides. CROCKER supported Unna's opinion.

On the second day interest centered chiefly in the dis-

cussion on lupus erythematosus, a vexed question occupying much attention recently in America. BOECK opened on the side of pathology, saying that the disease in all its forms is an eruptive inflammatory disorder whose special localizations are determined by the vasomotor centers of the skin. It is never a mere local process, although local irritants, heat, cold, etc., play a provocative part, bring the vasomotor disturbance in play. Considering the frequent association of lupus erythematosus and tuberculosis, the latter must play some etiologic part, and is probably the essential cause. The tubercle bacillus has, however, not been found in the tissues, and it is probable that erythematous lupus is due to its toxins, which act first on the vasomotor centers and then locally. The main anatomical changes are: dilatation of the vessels, intoxication of the tissue-cells and, secondary to the latter, inflammation, the whole resulting in atrophy, rarely necrosis.

UNNA, in speaking of treatment, said there exists no rational method, internal remedies having practically no effect. Local applications are best directed by anatomical findings, being directed in general to removal of the horny covering, and to lessening the edema which appears on slight irritation. It is best to begin always with mild, soothing remedies proceeding to destructive only when the uselessness of the former is proved. First use dessicating remedies, powders of zinc, sulphur, resorcin until irritation disappears, then something stronger, such as soft soap, almost a specific, or pyroxalin, an oxidation product of pyrogallol, non-toxic, in paste, or spread as a plaster. Mercury, particularly the ammoniated form, serves admirably, but it should be remembered that greasy bases are not indicated. Pastes should always be used instead. It is rare that recourse should be taken to cauterization in any of its forms. The author has seen absolute cures follow observance of these rules.

MALCOLM MORRIS, on the last day of the meeting, gave an admirable definition of eczema. He describes it as "a disease, the most prominent clinical feature of which is the infinite variety of lesion by which it displays itself, originating in the action of parasites on the skin, the resistance of which has been enfeebled by preexisting disease, structual abnormality, or by disordered innervation, sometimes made more intractable by gout or other constitutional states, but having no direct relation to the general health." As this is the embodiment of the modern conception of this disease, and as it contains every point brought out in the paper, it need not be further amplified, except to say that, while no anatomical basis exists for the assertion, the disease does apparently arise from states of nerve depression.

WALLACE BEATTY of Dublin continuing this debate, said that eczema is anatomically an inflammatory catarrh, clinically attended at some time in its history by exudation. He would exclude from the category all cases in which exudation does not occur. The points of differentiation as from psoriasis, for instance, are localization, itching (?), chronicity, history, and etiology. If it is really and always parasitic, finding of the parasite will in the indefinite future make the diagnosis. UNNA disclaimed any belief in the absolutely parasitic nature of the disease. COLCOTT FOX holds that it is best studied in children, and that it is only a local condition, constitutional disturbances only intensifying it. BARRENDT (Liverpool) is of the opinion that removal of the covering epidermis is the chief cause of eczema; in other words, that it is oftenest a local irritation, but there are cases in which transmissibility and consequent probable parasitism have been proven.

THERAPEUTIC HINTS.

Formula for an Expectorant Pill.—

℞ Terpin hydrat. . . . . gr. xlv
Radicis glycyrrhizæ . . . gr. xv
Ext. glycyrrhizæ . . . gr. xxx.

M. Ft. pil. No. XXX. Sig. Two pills three times a day.

For Infantile Gastro-enteritis.—

℞ Tannigen . . . . gr. xv–3 i
Sacchari lactis . . . 3 i.

M. Div. in chart No. XII. Sig. One powder every three hours in water or food.

For Spasmodic Croup.—

℞ Aluminii . . . . . ʒ ss
Vini ipecacuanhæ . . . . ʒ iss
Syr. tolutanæ . . . . ℥ ss
Aq. dest. . . . q. s. ad. ʒ iii.

M. Sig. One to two teaspoonfuls every three hours.

For Acute Laryngitis.—

℞ Hydrargyri chlor. mit. . . gr. i
Sodii bicarb. . . . . gr. xxiv
Pulvis aromat. . . . . gr. xii.

M. Ft. chart No. XII. Sig. One powder every hour.

A Diaphoretic Mixture for Bronchitis.—

℞ Morphinæ acetat. . . . gr. i
Potassii acetat. . . . . ʒ iii
Liq. ammonii acetat. . . . ℥ iii
Syr. tolutanæ . . . . ʒ i.

M. Sig. Two tablespoonfuls every third hour.

For Pruritus Ani.—

Brocq prescribes frequent enemata of a solution of boric acid in chamomile water, to be followed by the application of a soothing ointment (zinc oxid in vaselin). Lastly, the parts are abundantly powdered, the formula for the powder being as follows:

℞ Camphoræ pulv. . . . gr. xxv
Zinci oxidi, Bismuthi subnitrat. } aa . . ʒ vi
Talci . . . . . ʒ i.

M. Sig. External use.

Absorbent cotton compresses are used when feasible to keep the powder in contact with the anus. When the irritation has somewhat subsided the parts are painted every other day with a twenty-five-per-cent. solution of silver nitrate. A cocain and belladonna suppository inserted at night may assist the treatment.